THE FUNDAMENTALS OF MANUSCRIPTOLOGY

P. VISALAKSHY

Dravidian Linguistics Association
St. Xavier's College. P.O.
Thiruvananthapuram- 695 586
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First Edition

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Dedicated To My Beloved Parents

Late Smt. Sreedevikutty Amma (Parakkat, Tattamangalam)
and Late Shri.T.R. Menon (Valia Tachat, Chittur).

FOREWORD

Connoisseurs of different areas of learning are apt to hold their particular area higher above all else, as the 'Science of Sciences'. Not vying with a similar commonality of viewing, but out of attention to the factual base of all scholarship, it can be however be pointed out that all literature known to a scholar or to a common man is known through texts which are either handwritten or printed, and owes its value to the manuscripts at their base and to their authenticity and careful transmission; thus, so far as learning is concerned, we are forced to grant a top place of honour to the Science of Manuscriptology that takes care of this, as the 'Science of Sciences'.

For, critically edited texts of works from any language are the *sine qua non* of any serious study and appreciation relating to those works. Such critical editions, and their periodic revisions in the light of new discoveries and / or fresh thinking, have all along been the soundest foundations of the structure of research around these texts.

The marvel of accuracy with which the vast Vedic literature (*śruti*) has been handed down (or transmitted) to us orally, from generation to generation in India, has no parallel in the entire history of the world. However, our common experience in informal or oral transmission is quite different. One has only to recollect the game of a message being carried from person to person through mouth and ear, and with what distortion at the end point!

The picture is somewhat similar to the transmission of written texts. All early literature that we *now* have in a printed form was *originally* hand-written i.e., was in the 'manuscript' form (*manus* = 'by hand'). Can this transmission be always be smooth or faithful ? – In most cases not ? Why ? We have to know the Science of Manuscriptology to know the answers to that.

Dr. P. Visalakshy has a lot to say on this through her present book on the subject.

After presenting a clear picture of the field of Manuscriptology (with relevance to higher learning and research), she points out the immense potential it possesses in various areas like History, Geography, Sociology, etc (Ch. I). She explains how a Language differs from a Script (Ch. IV), and the various types of Writing Materials (Ch. II), the Writing Conventions and the Qualifications of a good Scribe (Ch. III). She touches the various practical experiences encountered in the fieldwork during the collection of manuscripts and bemoans some of those. She has grateful acknowledgement to works done in this regard by earlier scholars like Bühler, Keilhorn, Burnell, R.L. Mitra, R.G. Bhandarkar, H.P. Shastri, Ganapati Shastri, Sambasiva Shastri and others (Ch. VI). Cataloguing of the manuscripts collected is going to render useful service to scholars, and she gives valuable guidance in the matter (Ch. VII).

Constructing a good Manuscript Library is very important, and she gives a number of suggestions on its Building as well as its Location (Ch. IX). Highest in importance, however is the Preservation or Conservation of manuscripts. Dr. Visalakhsy has given a close thought to this aspect and has come out with important guidelines and suggestions (Ch. X). In this connection I am tempted to quote a stanza come across in some manuscripts by the late savant Professor V. Raghavan with his own rendering:

> संभूष्यं सदपत्यवत्, परकरात् संरक्ष्यं च सुक्षेत्रवत्,
> संशोध्यं व्रणिताङ्गवत्, प्रतिदिनं वीक्ष्यं च सन्मित्रवत्।
> बध्यं बध्यवदश्लथं दृढगुणैः, स्मर्यं हरेर्नामवत्
> नैवं सीदति पुस्तकं खलु कदाप्येतद् गुरूणां वचः ।।

"It is to be decked like one's beloved child; to be guarded from another's hand like one's virtuous wife; to be treated like an injured limb of one's body; to be looked up every day like a good friend; to be tied up strongly like a prisoner with strong threads; and to be always thought of like the Lord's Name; if one does this, his manuscript does not come to grief."

What is however much beyond expectation in a book on the 'fundamentals' of Manuscriptology is a chapter on 'Editing and Publishing' of manuscripts (Ch.VIII). Dr. Visalakshy has also included discussion on these in the book, giving a good epitome of Professor S.M. Katre's famous book, *Indian Textual Criticism*, not easily available for some time. She has also added at the end, a useful chapter (Ch. XI) on the different systems of Year Reckoning prevalent in India.

In short, Dr. Visalakshy has compressed in this small book so much from her knowledge and handling of manuscripts, and, despite its compactness, what is remarkable, she has couched it in a very simple language (–almost feeding her students and readers with digestible morsels). To my knowledge, this is the first of its kind in point of coverage of topics dealing with Manuscritptlogy.

Obviously it is her wide delvings in that science as well as her training in Sanskrit Grammar that is responsible for this handy but richly informative book. I am sure the community of students as well as scholars will find Dr. Visalakshy's monograph not only very useful but stimulating as well.

Curator,
Bhandarkar Oriental Research Institute,
Pune.

Dr. S.D. Laddu.
19.02.2003

PREFACE

Now there exists more awareness on the importance of manuscripts both in the Government level and also among the general public. Steps are being taken by the Central and State Governments for the Collection, Conservation and Publication of manuscripts. Some of the Indian Universities have realised the importance of manuscripts long back and hence started separate Manuscript Libraries for the study and research on ancient manuscripts. Recently some more Universities have come to the field. A few Universities are offering Manuscriptology as an elective paper for Post-Graduate Courses in Languages, History, Archaeology etc., and also M.Phil programme in Manuscriptology. There are books and articles on different aspects of Manuscript studies. A few scholars like Shivaganesha Murthy have discussed the major branches of Manuscriptology in a detailed way. But such books are only a few. There is a dearth of text books intended for the beginners in this field to get an overall understanding of the subject. Thus there exists a need for simple text books, catering to the requirements of students. This book is a humble attempt towards that goal.

However it is to be admitted that the author has close acquaintance with only one of the Manuscript Libraries of India and hence illustrations and examples given are based mainly on a single institution. Hope this drawback can be remedied by collecting details from other major institutions, in case a future edition is brought out.

I am very much indebted to Dr. S. D. Laddu, Former Professor of Sanskrit, Pune University and Curator and Ex-Director of Bhandarkar Oriental Research Institute for going through the draft of this book quite minutely and giving me valuable suggestions. I am also grateful to him for his illuminating Foreword to this work. My thanks are also due to Prof. V.I. Subramoniam and to other Office bearers of the DLA for accepting this book as a DLA publication. I am indebted to my husband Dr. G.K. Panikkar for the constant cooperation and help rendered to me during the preparation of this work. I acknowledge the services done to me by Smt. T.R Sushama, Madhurima Softek, Kazhakuttom for taking the computer printout. My thanks are also due to S.B. Press, Thiruvananthapuram for undertaking the printing of this book.

Thiruvananthapuram, P. VISALAKSHY
3-4-2003.

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Chapter I

MANUSCRIPTOLOGY AND ITS SIGNIFICANCE

Manuscriptology is considered as a separate discipline and some of the Universities and Institutions offer courses and award degree and diploma in it. It can be defined as that branch of knowledge, which concerns itself with the study of manuscripts. The term 'manuscript' in a broader sense means any document written or incised by hand such as documents or texts written on materials like palm-leaf, birch-bark, paper etc. or inscriptions on rocks, pillars, potteries, copper plates etc. For any manuscript, two essential components are required:

(1) the manuscript material and

(2) the written text.

In short, the writing down of any text on a writing material with the help of a writing aid produces a manuscript. By the study of manuscripts what is intended is the study regarding all aspects of manuscripts from their origin to the final phase of publishing. Different processes are involved in between these two stages and all such processes form part of Manuscriptology. Thus Manuscriptology comprises topics related to writing materials, writing aids, writing substances, scripts used, collection, care and preservation of manuscripts, cataloguing, editing and publication of manuscripts. Inscriptions do fall under the general definition of manuscripts. But with regard to the study of inscriptions, though it is not outside the field, by Manuscriptology what one usually means is the study of a written record on materials like birch-bark, leather, palm-leaf, paper etc., i.e. the thrust area of Manuscriptology is the study of the above documents.

Inscriptions differ from manuscripts in the following respects:

(1) Inscriptions can be more ancient than the manuscripts.

(2) Subsequent modifications or corrections to the text are not found in inscriptions as one usually finds in the case of manuscripts.

(3) In most cases the corpus of an inscription is comparatively less in extent than what is generally found in manuscripts and thus may not be sufficient enough to depict all salient features of the language in which it is incised.

(4) Generally speaking, the letters incised in inscriptions become unlegible in a relatively slow manner when compared with those found in manuscripts.

(5) The writing materials of inscriptions are more durable than the writing materials of the manuscripts.

(6) Manuscripts are more handy and can be easily carried from one place to another whereas inscriptions on rocks, pillars etc. lack such a facility. In the case of inscriptions on materials like copper plates, though they can be

carried from one place to another, they are not so handy as that of the manuscripts.

(7) A wide range of subjects are covered in manuscripts whereas the subjects dealt with in inscriptions are not so vast as one finds in manuscripts.

Manuscriptology as a discipline might have developed in regions like Indian sub-continent, China, Iran, Greece where ancient civilizations flourished and have an uninterrupted cultural history of a very long period. In India during ancient times though writing was known, the most preferred way of dissemination of knowledge was by oral transmission. Not only religious works like Vedas, Samhitas and Puranas but also the literary and scientific works were passed on orally. At a subsequent period, much prior to the beginning of Christian Era, Indian scholars began to write down their ancient literature obtained through oral tradition. In addition, new creations were also began to be written down. While writing the same text by different people, there ought to be some variations. Different interpretations and even reinterpretations to the same text were originated. Different commentaries were also created for the same text. Such interpretations and commentaries of the texts had a scientific basis. Similarly copying the manuscript became a usual phenomenon. The ancient Indians felt the need of preserving the manuscripts to the maximum extent possible and had adopted some traditional methods for the same. All these factors together contributed to the development of Manuscriptology in India.

Though Manuscriptology is a separate discipline, it has close affinity with many other subjects. In the preparation of manuscript materials and in their preservation and conservation it is dependent on sciences like Chemistry, Physics, Biology and even to Information Technology. As for writing and reading, it draws information from Palaeography. With regard to the collection of manuscripts it requires field work similar to that of social sciences. But the techniques used for the same has similarity with those adopted by Business Executives. In the arrangement of manuscripts in the stack room and in their cataloguing, Manuscriptology is related to the Library Science. In the reading and also in the editing of the texts, the knowledge of linguistic, literary, paleographic, historical and cultural aspects are highly essential and thus it is related to subjects like linguistics, literature, sociology, history etc. Proper editing is possible only through a knowledge of the subject dealt with in the text. The Manuscriptologist who edits the text needs the mastery of the subject concerned or else he seeks the helps of a subject expert. Thus regarding the subjects dealt with in manuscripts, Manuscriptology has connection to almost all branches of knowledge. In short, one cannot compartmentalize Manuscriptology as a discipline belonging to anyone of the sciences or to subjects like arts, fine arts, language, literature etc. It is one of the very few branches of knowledge which has a wider relationship with a good number of disciplines.

Significance of Manuscriptology

Manuscriptology provides authentic records for tracing the cultural, social, political and economic history of the people of a region or country. Written records are the best source material for linguists to study the history of a language. The sound changes, changes in the grammatical structure, addition, loss or change of forms for the lexical items at different periods of the development of a language are reflected in inscriptions and manuscripts. The creative endeavours of people on different branches of literature during different periods of time are known to us mainly through manuscripts.

It is to be borne in mind that further advancement to the existing knowledge is possible through some rare and hitherto unknown manuscripts. For example such advance - ments are made in subjects like Ayurveda, Architecture, Astronomy, Mathematics etc. The changes over the years in customs, practices and social attitudes of the people to a great extent can be understood through the corpus provided by manuscripts. Even in this modern age, manuscripts provide information for the advancement of knowledge. For instance, hitherto unknown events in history may be revealed through the publication of manuscripts. For example, a Malayalam commentary on the Arthaśāstra of Kauṭalya was of great help to Dr.Radha kumud Mukherji for writing his book 'Chandragupta Maurya and His Times'. Similarly Āryamañju-śrīmūlakalpa, an 8th century Buddhist work in which authentic details of history for fourteen centuries are given, was helpful to K.P. Jayswal in writing his book 'Imperial History of India'. Many of the unread and unpublished manuscripts may be useful for filling up the existing gaps in history or even for rewriting it. Similar is the case for manuscripts on technical literature like Vaidyaka (Medicine), Jyotiṣa (Astronomy), Śilpaśāstra (Architecture) and Rasāyanaśāstra (Chemistry). A good number of hitherto unknown scientific principles or even theories might be found in manuscripts and the discovery of such manuscripts can be helpful for further scientific discoveries or to make necessary amendments to the existing theories.

In a country like India Manuscriptology has a special significance when considering our hoary past and the invaluable contributions made by our forefathers in all fields of knowledge. As Professor Louis Renou has rightly pointed out, if India is loved and adored throughout the world, it is chiefly because of her being the repository of a long and venerable tradition, intellectual, moral and spiritual. When others do appreciate our ancient culture and acknowledge the contributions made to the humanity by the ancient Indians, it is shameful for us to be ignorant of them. Manuscripts are one of the major sources for the present day Indians to have a realization of our own cultural heritage.

Manuscriptology for Higher Learning and Research

Though not sufficient attention is given to this at present, it is a fact that Manuscriptology can play a leading role in the educational system of our country. An ideal education system helps a student not only to acquire sound knowledge in the subject or subjects he studies, but also contributes to the development of his total personality so as to enable him to live as part and parcel of the nation and society. For that the educational system should be in accordance with the cultural ethos of one's own country and should promote nationalism. The enormous contributions of ancient Indians in various fields of knowledge such as

Astronomy, Mathematics, Linguistics, Medicine etc., are well admired by scholars all over the world and many of them take keen interest in their studies. But unfortunately most of the Indians including the academicians do not know much about the greatness of the people of yester years who lived in our country or about their contributions. For example, there are 'scholars' in the concerned fields who are totally ignorant of the contributions of personalities like Āryabhaṭṭa, Bhāskarācārya, and Patañjali (Yogasūtrakāra). At present even in the syllabi of post-graduate courses, one cannot find much on Indian theories. Now there is some awareness on the need for interpreting the valid contributions of ancient Indians. In future it may become obligatory that those who pursue higher learning and research in any branch of study ought to know the quintessence of the Indian contributions in their particular branch of study. This is possible only with the help of manuscripts. Though most of the manuscripts now obtained undamaged are from 16^{th} century onwards, many of them are copies whose originals are of earlier periods even taking us much earlier to the commencement of Christian Era. The works of Bhāsa, Kālidāsa, Pāṇini and the great Puranas are a few such examples.

It may be noted that only a microscopic few of the available manuscripts are so far read and a large chunk is yet to be studied. It is possible that in addition to the works so far discovered, a good number of pioneering works in the fields of technical subjects similar to those of Pāṇini, Bhartṛhari, Āryabhaṭṭa, Kaṇāda, Bhāskarācārya, Kauṭalya, Suśruta, Caraka and the like are still lying unnoticed in the folios of manuscript bundles. The case is not different in non-technical subjects too.

In India a subject like Manuscriptology has immense potential for leading the country forward not only in the fields of literature, art and culture but also in the fields of science and technology. In addition to the fact that the manuscripts open up a new vista of knowledge, their study induces the spirit of patriotism and national integration amongst us in a big way. The manuscripts on philosophical literature help those who are in search of the fundamental truth of this mysterious universe and human life. To satiate the needs of those who are interested in aesthetics there exists a lot of manuscripts on fine arts. Those who dedicate their life to spiritualism can find manuscripts in their field in abundance. Same is the case for those who are interested in subjects like History, Geography, Sociology, Diatics, Warfare etc. To sum up, in India through Manuscriptology one can enter a treasure house of knowledge from which one can satiate the thurst of knowledge in any branch of study.

Chapter II

WRITING MATERIALS

The texts of manuscripts are found to be written on the surfaces of different materials. They are termed here as 'writing materials'. In the beginning, leaves of plants and trees might have been used for writing. That might be the reason for the Sanskrit word for leaf 'patra' has the meanings such as letter, document, leaf for writing upon etc. Among the different types of leaves so experimented, except palm-leaves all other leaves might have been discarded since they could not be kept safe for longer periods. Subsequently, following materials acquired wider currency as writing materials for manuscripts.

(1) Palm-leaves

Before the introduction of paper, palm-leaves were the most popular writing material in all South Asian countries including Sri Lanka and India. In India the palm-trees were found in abundance in South India and hence the use of palm-leaf as a writing material might have begun in the South and from there it might have spread to other parts of India. The life of a palm-leaf manuscript is usually around five hundred years. But if cared properly and the climatic conditions remain congenial to palm-leaves, they can be preserved for a much longer period. The earliest specimen obtained is the fragments of an Indian palm-leaf manuscript found in Turfan, the date of which is considered as either 4th or 5th century A.D. The two Indian manuscripts Prajñāpāramitahṛdayasūtra and Uṣṇīṣavijayadhāriṇī found in Horiuzi (Japan) manuscripts belonging to 6th century A.D come second in antiquity. Kubjikāmatam written in later Gupta characters found in Japan and the two manuscripts Skandapurāṇa and Laṅkāvatārasūtrakept in Durbar Library, Khatmandu are of the 7th century A.D. The use of palm-leaf as a writing material might have been very popular all over India at least by 3rd century A.D. * From among different species of palms, the leaves of only two varieties are used as writing materials of manuscripts. They are (1) leaves of palmyra palm (Borassus flabellifer linn) and (2) leaves of fan-palm or tālipat (Corypha umbraculifera linn). The first type of palm is very often referred to as tāla and the second type of palm as śrītāla. But in Tamilnadu they are called nuṅku- ppanai and tāḷippanai respectively whereas in Kerala they are referred to as karimpana and tāḷiyōlappana.The height of a full grown palmyra (tāla, karimpana) is about 15 to 20 metres where as the height of a normal fan-palm (tālipat, tāḷiyōlappana) comes to 20 to 25 metres. Its trunk is thinner than palṁyra. The leaves of palmyra are more thick and their surface more rough and hence they can be used only for writing with stylus. The śrītāla leaves are relatively more thin, flexible and light coloured. Hence on the surface of the leaf of this palm,

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* Palmyra Palm and Its Uses, Department of Land Records and Agriculture, Madras, 1896.

it is possible to write with stylus and also with pen or similar writing aids. It is a suitable base for traditional carbon ink. In addition, between the two, tālipat leaves are more durable and hence most of the palm-leaf manuscripts belong to this type. It is believed that the earliest among them used for writting is śrītāla. In Kerala the leaves of tālipat or fan-palm is called tāḷiyōla. Palmyra (tāla, karimpana) is commonly found in almost all parts of India but tālipat or śrītāla (tāḷiyōlappana) is found mostly in South India and there too its luxuriant growth is in the Malabar coast.

Specially processed palm-leaves were used to write all important documents including literary and scientific works. Unprocessed dry palm-leaves do not last long. Hence the texts intended to be kept for longer periods were written only in processed palm-leaves. The processing was done for increasing the durability of palm-leaves. The methods of processing exhibit some regional variations i.e. the methods adopted in Kerala need not be the same in Bengal or in Sri Lanka. According to the information received, the method adopted in Kerala is as follows: Suitable undamaged green palm-leaves, not very tender or not more mature, were selected and cut them neatly in the required size. The cut palm-leaves are of uniform size. The size is dependent on the volume of the work to be scribed. Usually the sizes vary from 10 cms to 90 cms in length and the usual width is 3.5 cms. Hence processed palm-leaves in different sizes, each size having the leaves in plenty, had to be got ready. The hot water was sprinkled on the cut leaves and dry them in shades for two or three days. Then they were boiled in a mixture of water, milk and turmeric. The boiled leaves are kept in mild sunrays for some time so as to remove the wetness and then dry them in shades. It may be noted that before the introduction of paper, the common writing material in South India was palm-leaves and other writing materials were only very rarely used.

(2) Birch-bark (Bhūrja Patra)

Birch is a tree having smooth bark which can be easily peeled off in thin sheets. Birch tree is commonly found in Himalayas. The inner bark of this tree was used in North India as a writing material. When compared to other regions its use was more in Kashmir. Until 8th century A.D it was a popular writing material. The Prākṛt manuscript of Dhammapada in Kharoṣṭhī script obtained from Khotan (2nd century A.D.) and the Bower manuscripts (5th century A.D.) stand testimony to it. The Bakshali manuscript in Śāradā script gives clear evidence to show that birch-bark was used for writing important works up to 8th century A.D. In the subsequent periods the use of birch-bark was restricted to write Bījamantra. A Bhūrjapatra manuscript, Bālabodhinī of Jagaddhara in Śāradā characters bearing the number 298/1875-76, is kept in Bhandarkar Oriental Research Institute, Pune. An unwritten specimen of bhūrjapatra can be seen in the collection of Oriental Research Institute and Manuscripts Library, Thiruvananthapuram. Like palm-leaf, the birch-bark also requires some processing for converting it as a writing material.

(3) Kumbhi-bark

The bark of a tree known as Kumbhi or Kumbhikaḥ was used as a writing material. It was considered as a sacred writing material and hence writing on them was restricted to places of sanctity such as hermitages and monasteries. Kumbhi tree grows abundantly in the jungles of Orissa. Might be due to this fact that the use of Kumbhi-bark was more popular in the Orissa region.

(4) Agarutvak (Sañcipāt)

Agaru (Aloe) also known as aguru is a tall fragrant tree usually grown in the hilly areas. Its botanical name is Amyris Agallocha. It is known as sañci in Assam. The bark of this tree after necessary processing was used as a writing material in North-Eastern parts of India. References are found in ancient works about the use of agarutvak as a writing material. However, agarutvak manuscripts so far obtained do not go back to a period prior to 15th century A.D. An aloe-bark manuscript in the Bengali-Maithili-Assamese characters of about 15th century A.D depicting the Sundarakāṇḍa of Rāmāyaṇa is kept in the Bibliotheque Nationale, Paris. An incomplete agarutvak manuscript having 10 folios of a work entitled Kṛṣṇastuti (No. 2174) is kept in ORI and Mss. Library, Thiruvananthapuram. The folios are written on both sides. It is of the size 6 cms x 29 cms. Both the language and the script are in Assamese. Though agaru (known as 'akil' in Malayalam) is found in Kerala forests, no evidence is obtained for its use as a writing material in Kerala.

(5) Leather

Leather was a popular writing material in other countries. But its use was not very common in India, and this might be due to religious sentiments. However a few manuscripts in Indian languages written on leather were obtained from foreign countries. The scribes of such manuscripts might be non-Indians.

(6) Cloth

For writing purpose a special type of sturdy cloth was in vogue. Some Jain scriptures were found to be written in silk cloth. A kind of cotton cloth known as kaḍata or Kaḍitam was used for writing manuscripts in the Mysore regions. Prof. Chaube states that the vacanas of Vīraśaivas, songs of Haridāsa and Yakṣagāna plays are found written in Kaḍata. A paste usually of rice or wheat powder was applied to the cut pieces of cotton cloth. When dried both the sides of the cloth were made smooth by rubbing them with conch. A manuscript, the material of which is old cloth but having a coating of slate on both the surfaces is found in the collection of ORI and Mss. Library. It is in Telugu script and is written with a specially designed pencil. This manuscript is a long one having a length of 882 cms folded into 42 layers, each layer is of the size 21 x 24 cms. It appears to be between 150 to 200 years old.

(7) Tulāpat

Tulāpat is a type of paper made out of cotton. It was found to be used in Assam from the beginning of the 19th century. In some other regions a paper-like writing material was made out of torn cloth.

(8) Paper

In India the popularity of paper as a writing material is a later phenomenon. It was the Chinese who manufactured paper first and began to write on it. The period might be around the first or the beginning of the second century A.D. From very ancient times the Indians and the Chinese were in close contacts and hence in all probability, the use of paper might have been known to the Indians from a very early period. It is said that Indians used cotton cloth and cloth pieces for the manufacture of paper. A paste out of rice or wheat flour was applied on both the surfaces. When dried, the surfaces were made smooth by rubbing them with conch. Since there were other locally available writing materials to which the Indians were accustomed to and also there was no official support from the ruling class, the use of hand made paper did not get much popularity in India upto the end of 12th century A.D. The situation changed since 13th century A.D. The Muslim rulers introduced paper from Persia and most of the official documents began to be written on paper. The use of paper in the royal courts and its easy availability since then due to import and also due to its better convenience for writing, paper became very popular all over India and ultimately replaced other writing materials when printing was introduced. But though not in large numbers, paper manuscripts were used in India even prior to thirteenth century. The old paper manuscripts of ORI and Mss. Library stand testimony to it. In its collection there are old paper manuscripts from 10th century onwards. Following are a few such examples:

(1) Bṛhatjjātakavivaraṇam-Jagaccandrikā, Ms. No. 7715, DN Script, Śaka 888/AD 967.

(2) Alaṅkārasūtrasandarbha, Ms. No. 9420, DN Script, Sam 1056/ A.D 999.

(3) Kapardikāpraśna, Ms. No. 1674, DN Script, Sam 1082/AD 1025.

(4) Paramānandatantram with ṭīkā, Ms. No. 1544, DN Script, Kali 4529/A.D1028.

(5) Dravyaguṇaśataślokī, Ms. No. 9698, DN Script, Sam 1236 / A.D 1179.

It is interesting to see that all early manuscripts in paper listed above are not in any of the South Indian languages but in Sanskrit. Until 19th century most of the manuscripts in South India were of palm-leaves and not of paper. It indicates that as far as North India was concerned, though not widely, paper was used as a writing material much earlier to the period of Muslim rulers. In the palaeographical index of the dated manuscripts, Winternitz and Keith point out a Sanskrit paper manuscript in Western Gupta character (Kuchari) said to be belonging to a period between 5th and 7th century A.D. Shivaganeshamurthy cites from the News paper Deccan Herald dated 4-3-1986 that the second oldest Hafiz manuscript in paper dated 816 A.D is kept in Khuda Baksh Oriental Library, Patna.

The other writing materials can be broadly classified into two groups: (1) Metals and (2) Non-metals. Copper, gold, silver, brass, bronze etc. come under the first group. Earthenware like bricks, pots and other materials like ivory and wood belong to the second group.

Writing Tools

The instruments used for writing are termed here as 'writing tools'. They are also known as 'writing instruments or writing aids'. Stylus, reeds, spines of porcupine, strong quills of birds and suitable twigs of plants were used for scribing manuscripts. At a later stage pen was also introduced especially to write on paper. Chisel was the major writing aid for incising inscriptions.

(1) Stylus

Stylus was the most common writing aid for writing on palm-leaves. In most of the palm-leaves the letters were carved with the help of stylus specially designed for the purpose. Usually it was made out of iron. Though not common, stylus out of bell metal was also in vogue. On an average, the length of a stylus is about 15 cms. It can be a little bit more or a little bit less in length. Stylus has a cylindrical shape. The top end width is more and usually it is that of a little finger. The width can be a little bit more or can be a little bit less. It tapers to the other end and ends with a sharp tip. This end is nail-shaped. The top end which does not have the sharp tip may be either flat or ball shaped. Styluses can be classified into three types: (1) One end is sharp and the other end is round and a little bit heavy. This type is relatively shorter in length. (2) Instead of the rounded shape, one end is a small knife. The nail portion is similar to that of the first category. (3) This type is related to the second type except for the difference that it can be folded. The sharp end can be folded to one side and the knife end can be folded to the opposite side. This type is very safe and handy to carry. In addition, the knife end in both second and third types of styluses are useful for cutting the palm-leaves into required size both in length and width. Letters are carved on the palm-leaves by the sharp nail end of the stylus and hence no separate writing substance is required. In the styluses used in Kerala the top edge is generally ball-shaped. Affluent people cover this ball-shaped portion with costly metals like gold or silver. The scribing on palm-leaf is done by the sharp nail-shaped end. For the use of stylus, special training is required.

Reeds, spines of porcupine and quills were used to write on birch-bark. Pens and brushes made out of reeds, quills, twigs of plants etc. were found to be used for writing on paper.

Writing Substances

Ink, juice of plants, black ashes, gall nut (ink nut) paste and carbon are some of the many varieties of substances used for writing. For writing on birch-bark a special type of ink was used. It was locally prepared. The common type of ink used for writing on paper was prepared out of carbon black mixed with gum or gingely oil. The practice of writing manuscripts with reed pen and ink was very common all over India except South. In South India writing with ink on palm-leaf was a rare phenomenon whereas in North India it was used in all varieties of manuscripts including palm-leaf. In fact the more common pattern in the North was to write on palm-leaves with ink instead of incising with stylus. There existed two types of writing ink: (1) Lasting and (2) Washable. The first type of ink was used for writing manuscripts and such other records which ought to be kept for longer periods. D.C Sircar explains the preparation of a common variety of lasting ink and it is as follows: "For preparing lasting ink the resin of the pipal tree was ground nicely and mixed with water kept for sometime in an earthen pot. It was boiled on fire and a quantity of nicely ground borax and lodhra was mixed with it while boiling. This thing was ultimately strained through cloth. To the liquid thus prepared was mixed lamp black, made by burning sesame oil in lamps, in order to make the colour of the liquid sufficiently black."* This ink was used to write on palm-leaves and paper and was more common in North India. For writing on birch-bark the ingredients of the writing ink were different. It was made out of burnt husk of almond and cow's urine. The burnt husk of almond was grounded and the powder thus obtained was mixed with cow's urine and then this mixture was boiled so as to get a concentrated solution or ink for writing on birch-bark. Another variety of lasting ink used for writing on paper and on palm-leaves was prepared out of turmeric, black ashes of coconut shell, juices of certain plants and gingely oil. The ordinary ink for temporary purposes was prepared with lamp black mixed with water, gum, sugar or any other sticky substance. In South India this type of ordinary ink was prepared by mixing carbon black or lamp black in gingely oil. Its concentrated variety almost like a paste was smeared on the surfaces of palm-leaves on which letters are carved with stylus so as to make the letters more visible. The colour of the writing ink was generally black. However inks of other colours were also in vogue. Among them red ink was more popular. Inks having colours like green and yellow were also found. Such coloured inks were used for certain restricted purposes. Different colours were made out of locally available ingredients.

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* Indian Epigraphy, D.C. Sircar, 1964, p. 80.

Chapter III

SCRIBE AND THE WRITING CONVENTIONS

In Manuscriptology, attention is not limited to the manuscripts written by the original author of which those survived may be very few in number. Due importance is also given to the copies of the original and the subsequent generations of copies. A manuscript copy is one which can either be a direct copy from the original or can be a copy of another copy. In ancient periods, copies of a manuscript were taken in successive periods. Some of the manuscripts available now are the products of such successive copying processes. Some of them may be copies of the same scribe. It would also be possible that some of the seemingly similar manuscripts might be copies scribed by different people belonging to the same region. Similarly some of the manuscripts of a given time may show variations since they might have been scribed by people belonging to different regions. The manuscripts of a work may be of the same period or of different periods. Anyway what is to be remembered here is that in the process of recopying, manuscript copies of different periods, different regions or of different scribes might be utilized. The recopying was a continuous process. A manuscript might have been copied and recopied again and again as per the need.

A manuscript might be scribed by the author by his own hand or by somebody engaged by the author. A manuscript the text of which is scribed by the author himself or by a scribe under the direct supervision of the author is an 'autograph'. Theoretically, a person who scribes the manuscript is a scribe. Thus a scribe can be the original author or any person engaged by him or a person who copies a manuscript. When the author engages somebody for scribing, the scribe writes the oral version of the author under the author's own direct supervision. Very often, the term 'scribe' s reserved for the person other than the author who writes or copies a manuscript. In India there were professional scribes who were engaged in the copying of manuscripts and whose services were utilized by those who would like to get the copies of manuscripts. The professional scribes were specially trained in the art of writing. The Sanskrit term to refer a scribe is 'lekhaka'. Royal courts, religious institutions and affluent persons used to appoint scribes on a permanent basis.

Scribing Conventions

The scribes perform their duty with religious sanctity. Their work begins only after taking bath, lightning oil lamp and worshipping the deity. It was believed that while scribing a manuscript, both mind and body should be kept pure (śuddha). When the text is incised or written on a writing material it becomes a manuscript and according to Indian tradition manuscripts are viewed as sacred objects. The conventions followed were almost same whether it was for writing a new work or copying from another manuscript. A few such conventions are given below:

1. The writing of a manuscript begins with some initiative words or symbols. In Indian manuscripts whatever may be the language or script used and whatever may be the subject dealt with, the pattern existed was to scribe some auspicious words, sentences or symbols before the beginning of the text. They do not have any connection with the text of the manuscript. Words like om, śrī, svastiśrī, hariḥ, śrīgaṇapataye namaḥ etc. are a few such forms of initiation of a manuscript. The initiative words are either written at the top or at the left side margin of the folio. The writing of initiative words at the top is not on the right half of the folio. It can be at the top either on the central portion or towards the left half. If the auspicious words for initiation are written on the left margin of the folio, they are always written above the mid portion of the folio. In some manuscripts both auspicious symbols and words are found as initiators. The most common symbol used is the svastik sign (卐). In such cases the symbol is given first and the word or words are written just below to the symbol.

2. Before starting the actual subject matter the first few lines in a manuscript are generally in praise of God. Similarly after the completion of the text a manuscript usually ends with the praising of God. Such lines in praise of God are called as 'stuti'. The stutican be of any God or Goddess. Generally it depends on whose devotee the scribe is.

3. In olden days writing a manuscript was by sitting on a pīṭha or a mat. pīṭha is a wooden plank specially prepared for sitting. For writing manuscripts the scribes used to sit on the pīṭha by facing east or north.

4. Usually both the sides of the folios were written. The number of lines is almost equal in both the sides. To the extent possible, maximum number of letters were scribed on each side. The size of letters are almost same in all the folios of a palm-leaf manuscript if it is scribed by the same person. Word boundaries were not indicated either by leaving space in between the words or by any other means. Every line on the leaf might contain more than one sentence or line of a verse. As per the writing convention, the word at the end of each line on the leaf need not be written in full. The line would be stopped at the right end of the leaf without looking into the fact that the letter scribed is a word-final or even at least a morpheme boundary. If a line is stopped with a medial letter of a word, then the next letter is written at the beginning of the next line. This is applicable not only to letters but also to independent allographs of vowels. In prose works sentence boundaries are seldom marked. However in a very few manuscripts they are given. In some poetical works verse numbers are given at the end of each verse. Very often even the chapter divisions are not indicated and are found to be written in a continuous manner.

5. In some of the manuscripts in order to indicate the end of a chapter the last word is found to be repeated. In verses for indicating the repetition of lines, the first word of the line repeated is written and after that some blank space left on the folio. Yet another way is to give some dots after the first word of the line to be repeated.

6. Usually the title of the work is not given in the beginning. In some works it is given at the end and in some other works the title of the work and the chapter number are

found at the end of every chapter. In any case they are given under colophon.

7. In manuscripts instead of page numbers, folio numbers are marked. Folio numbers are given in the extreme left side on the facing side of the folio. In Kerala the usual pattern adopted for giving folio numbers is with the help of Malayalam letters. The system adopted for this is known as 'nannanyaṣkrādi'. The letters used for this purpose are given in the śloka

"na nna nya ṣkra jhra ha gra pra dre ma
tha la pta ba tra tri cha ṇa ña."

The values of these letters are as follows:

na	1	tha	20
nna	2	la	30
nya	3	pta	40
ṣkra	4	ba	50
jhra	5	tra	60
ha	6	tri	70
gra	7	cha	80
pra	8	ṇa	90
dre	9	ña	100
ma	10		

8. Most of the manuscripts are undated. But in a few manuscripts where date is given, it is at the end of the work. When a manuscript is a copy of another one, the date given is

the date of the newly scribed copy and not the date of the source manuscript from which it is copied.

9. In many of the manuscripts, name of the author is given under colophon which is known as 'Puṣpikā' in Sanskrit. Usually it is at the end of a work. However in palm-leaf manuscripts the name of the scribe who copies the manuscript is not generally given. But in transcripts the pattern is to give details such as the name of the author, work, name of the scribe, source of the manuscript, date of copying etc. By 'transcript' what is meant is a hand written copy of the manuscript in paper.

10. If any mistake occurs while writing on a palm leaf, correction is effected in the following ways:

(a) In the case of replacements the correct letters or words are shown by writing them just above the letters or words to be replaced or else by writing the correct forms in the margin (left) of the concerned line.

(b) For addition also, almost the same pattern is followed. If a new word or letter is to be added, that letter or word is written near to the position at which it is to be added after giving a 'Haṃsapāda' (+) or 'Kākapāda' (X). They can be given either below or above the line.

(c) Mistaken letters or words which are to be deleted are indicated by drawing a small line over or under the letters or words to be deleted. But in the case of a sentence both insertion and deletion are marked by the same way i.e. for inserting a new sentence or for deleting a sentence the whole sentence is placed in between two brackets. Whether it is a deletion or an insertion is to be understood based on the context. In certain manuscripts the lines to be deleted are painted with yellow colour, usually made out of turmeric.

(d) In order to point out the omission of certain portions one or two Haṃsapāda symbols are given at the places of omission. In some manuscripts a few dots or horizontal strokes are also found for this purpose.

(e) There can be a few instances where the scribe forgets to write on the reverse side of a folio, which may lead a reader to think that it is due to the omission of some portion. In order to make it clear that there is no omission the sentence 'nātra granthapāṭhaḥ' iswritten on the blank space.

(f) There are instances where a passage is unintelligible to a scribe then that fact is pointed out by him with the help of a Kuṇḍala sign (O).

11. The general convention in the writing of manuscripts is to give colophons. Colophon is "the tail piece of a manuscript or a section there of, recording the ending of a section, part or the whole work itself." * Usually information regarding the name of the work, name of the author, title or titles attributed to the author are indicated through colophon. So also if the date is given, then that too will be found in colophon.

Qualifications of a Scribe

A good scribe possesses the following qualities:

(1) His writing requires to be very legible and neat.

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* Introduction to Indian Textual Criticism, S.M. Katre, 1954, p. 91.

2) The scribe needs to be quite proficient in the language in which the manuscript is to be written. Having a sound knowledge in the language helps to reduce scribal errors.

(3) Similarly the scribe should have the scholarship so as to correctly understand each word of the text of the manuscript. This will help in avoiding mistakes while writing.

(4) The scribe should be honest and faithful so as to write only what the author dictates. While copying from another manuscript he should be faithful to the original manuscript from which the copying is done. In short, a scribe should not make any modification or variation in the text of the manuscript.

(5) It is an additional qualification for a scribe to have speed in writing.

(6) A scribe needs to have a very good eye-sight.

(7) He should not have any defect in hearing. If scribing is done by hearing the dictation of the text, then any problem in hearing does naturally affect the transcription.

Chapter IV

LANGUAGE AND SCRIPT

Language basically is an oral communication system. The oral transmission of the language has the inherent limitation of its non-feasibility to be displaced either in time or in space i.e. speech vanishes as soon as it is spoken. It is heard only in the close vicinity of the area at which the speech event takes place. In the absence of modern communication equipments such as telephone, radio, audio cassettes and the like, in ancient times there was no way to preserve the ideas expressed through language for the future or to propagate them to the people of other regions. This necessitated the innovation of writing, the units of which are visual symbols representing sounds, syllables or words. These visual symbols of language constitute a system known as script, the units of which are alphabets, letters representing syllables, or ideographs. Writing a language is its graphic representation based on a script specially invented for the same.

The knowledge of ancient scripts is quite essential in Manuscriptology. Though the study of scripts as such is the subject matter of Palaeography, a Manuscriptologist needs mastery of them for reading and editing manuscripts. Since the manuscripts belong to different periods of time and to different regions, the changes found for the script of a language in accordance with the passage of time and also due to regional variations need to be known to the Manuscriptologist.

Finely cut incised seals obtained from Harappa and Mohenjodaro suggest that writing was known to the Indians from a very early period. The period of Indus Valley civilization is supposed to be between 3rd and 4th millennium B.C. But it may be noted that a unanimously accepted decipherment of the Indus script is yet to come. The earliest deciphered Indian script is Brāhmī and the period of its origin might be around 7th century B.C. The next deciphered Indian script in antiquity is Kharoṣṭhī, the origin of which is around 5th century B.C. Kharoṣṭhī was also referred to as Bactrian, Indo-Bactrian, Aryan, Bactropali, Kabulian and Kharotti. The use of Kharoṣṭhī was restricted to the North-West region of India and the adjacent Central Asian regions whereas Brāhmī was spread all over India. Kharoṣṭhī script became extinct by the end of the 4th century A.D. The early inscriptions found in Kharoṣṭhī are the rock inscriptions of Aśoka near to shahbazgarhi and Mansehra. Manuscripts in Kharoṣṭhī are found from 2nd century A.D. The earliest manuscript is in Kharoṣṭhī, i.e. the one obtained from Khotan, the period of which is 2nd century A.D. The pattern of writing in Kharoṣṭhī is from right to left.

Scripts of all modern Indian languages, except a few like Urdu, are developments from Brāhmī. In early Jaina works like Samavāyaṅga Sutta (300 B.C.) and Paṇṇavaṇā Sutta (168 B.C.) this script is referred to as 'Bambhī'. Subsequently it might have been named as Brāhmī following the popular belief that Brahma the God of creations is the inventor of writing. The Piprahwa Buddhist vase inscriptions of Basti district, Uttarpradesh and the Badli inscription found from Ajmer district of Rajasthan, both belonging to 5th century B.C, are the earliest inscriptions in Brāhmī so far obtained. Unlike Kharoṣṭhī the Brāhmī script is written from left to right. Brāhmī had regional variations even at the time of Aśoka. The regional variations can be broadly classified into two major groups, Southern Brāhmī and Northern Brāhmī.

Southern Brāhmī

The Brāhmī varieties found in the Deccan and the Southern regions of India belong to this group. * It has two major sub-divisions, the Deccan variety and the Drāviḍi variety. The Deccan variety is also known as Andhra script. The period of its existence is considered as from 2nd century B.C. to 1st century A.D. It was prevalent in Deccan and in a major part of Andhra Pradesh. The cave inscriptions of Nanaghat, Nasik and Pitalkhora belong to the Deccan variety. The scripts used by Śātavāhanas and Pallavas are also of this type. The Drāviḍi script has two sub-varieties the Kalinga variety (Northern Drāviḍi) and the Tamil Cave Brāhmī (Southern Drāviḍi). The Kalinga type was used in the Kalinga region. Diringer defines the Kalinga region as the areas surrounded by Mahanadi in the North, Godavari in the South, Eastern ghats and the sea. The cave inscriptions found in different parts of Tamilnadu, the period of which ranges from 3rd century B.C. to 1st century A.D, are of Southern Drāviḍi . The inscriptions of Idakkal in Wynad district of Kerala are also

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* Details on the developments of Southern Brāhmī are given in the forthcoming DLA publication 'The Grantha Script' by P. Visalakshy.

of this type. Proto Telugu-Kannada script evolved from the Deccan and the early Kalinga scripts. The Telugu and Kannada scripts originated from the Proto Telugu-Kannada script. Vattezhuttu, Tamil script and Grantha script were the developments from the Southern variety of Drāviḍi . Vattezhuttu was the writing system of the Tamil language and when Malayalam became a separate language it was used also to write Malayalam. Kolezhuttu and Malayanma were two regional varieties of Vettezhuttu found in Kerala. In addition to Vattezhuttu, Tamil script was also used in ancient times to write the Tamil language. Both these two scripts might have co-existed but Vattezhuttu appears to be more ancient. The present day Tamil script is a development from the ancient Tamil script. But Vattezhuttu ceased to exist. Grantha script was used to write Sanskrit language in the entire Tamilnadu and Kerala regions and also in the Tulunadu region of Karnataka. Modern Malayalam script is an adaptation of the Malabar variety of Grantha script (Ārya Ezhuttu). Tigaḷāri, a script once used in the Kasargod district of Kerala and the adjacent Tulunadu region of Karnataka can also be considered as a development from Grantha script since it evolved out of Malayalam, Grantha and Kannada scripts. The genesis of many of the writing systems of South-east Asian countries like Sri Lanka, Maldives, Myanmar, Cambodia, Siam and Indonesia is the Grantha script.

Northern Brāhmī

The spread of Northern Brāhmī was quite extensive comprising the whole Indian subcontinent north of

Deccan. *The Brāhmī script underwent further developments from the period of Aśoka to the period of later Mauryas and then again to the Gupta period. The writing systems of the Neo Indo-Aryan languages are the developments from the Brāhmī characters used during the Gupta period. The Brāhmī of the Gupta period is very often referred to as Gupta characters. In addition to the Central Asian scripts like Agnean, Kuchean and Khotanese, the Indian language scripts like Śāradā, Nākri, Lāṇḍa and Gurumukhi originated from the western variety of Gupta characters. Tibetan is related to both Khotanese and Siddhamātṛkā. Similarly Gurumukhi has affinity not only with Lāṇḍa but also with Devanāgarī. The eastern variety of Gupta characters had two sub-divisions, the Western and the Eastern. The Western sub-variety developed into Siddhamātṛkā. Both Kaithi and Kuṭilalipi are developments from Siddhamātṛkā. Bihāri script used by the Kāyastha community and the Bhojpuri characters originated from Kaithi. The origin of Nāgarī scripts was from Kuṭilalipi. The Nāgarī scripts are classified into Eastern (Pūrva Nāgarī), Western (Ardha Nāgarī), Central (Devanāgarī) and Southern (Nandināgarī). Yet another broad classification divides Nāgarī scripts into Northern and Southern. In this classification, Northern variety is Devanāgarī and the Southern variety is Nandināgarī. Rājasthāni, Mahājani and Gujarati are related to Devanāgarī. Moḍī the script of Marathi language has close affinity with both Nandināgarī and Devanāgarī. Nandināgarī, the Southern variety of Nāgarī was in existence in Mysore and its adjacent regions. Newari (Nepali) and Old

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* For more information on Northern Brāhmī see 'Nandināgarī Script', P. Visalakshy, DLA, Thiruvananthapuram, 2003.

Bengali scripts originated from Proto-Bengali which in turn was a development of the Eastern Gupta characters. Assamese, Oriya, Mythili, Manipuri and modern Bengali scripts are developments from Old Bengali characters. The script of Saurashtrian language (the language spoken by the Saurashtrian community found in Madurai, Virudunagar and Salem regions of Tamilnadu) is also an off-shoot of Northern Brāhmī.

According to the written evidence of the deciphered Indian scripts, Brāhmī comes first having the earliest inscriptions found in India. The date of early Brāhmī inscriptions go back to 5th century B.C. Kharoṣṭhī inscriptions come next in antiquity having inscriptions from 3rd century B.C. The language of early inscriptions was Prākṛt. Among the Modern Indian languages, Tamil has the earliest inscriptions, the script used being Tamil Cave Brāhmī, the period of which ranges from 2nd century B.C. to 3rd century A.D. Vattezhuttu, the script of the Tamil language might be next in antiquity with regard to the use in inscriptions. According to Mahalingam an epitaph found at Tirunātarkunṟu belonging to 4th century A.D is the earliest Vattezhuttu inscription. The origin of Tamil script according to Būhler is of 4th or 5th century A.D and Mahalingam states that two labels found in Tamil script in Tiruchirappally are of 6th century A.D. He states a label in Grantha script obtained from Tiruchirappally is of 5th century A.D. The inscriptions in early Telugu-Kannada script are obtained from 5th century onwards. Inscriptions in Neo-Indo Aryan language scripts are obtained from 10th century onwards.

Chapter V

MANUSCRIPT CHARACTERISTICS

Any text scribed on a writing material by a scribe is called a 'manuscript'. A person who writes the text in any language on a writing material is a 'scribe'. A leaf of the palm-leaf manuscript is called a 'folio'. Text is written on both sides of the folios. A complete work in the manuscript form is called a 'grantha'. The folios of a grantha are arranged in a continuous sequential order. The scribed folios are arranged one above the other. Keeping the folios of a grantha in the proper arrangement, two holes are made on the palm-leaves. A long thread made out of cotton or silk is inserted through both the holes for tying the arranged folios. In the case of large manuscripts two cylindrical shaped wooden rods suitable to be passed through the holes are used. The length of the rods will be more than that of the manuscript bundle. The length and width of the manuscripts show variations and they are dependent on the size of the work. Generally speaking, larger manuscripts have longer and wider folios whereas for smaller manuscripts the length and width of the folios may be shorter. Similarly the number of lines in a folio of a manuscript work need not be identical with the number of lines found in a folio of another work. For calculating the extent of a manuscript work i.e. grantha, the unit of measure is 'grantha-saṃkhya' (number of granthas). A grantha unit is of 32 akṣaras (syllables). Grantha-saṃkhya is calculated as follows: number of leaves (folios) x number of lines x number of letters x 2 ÷32. Here the number of lines and the number of letters are as per those found in a single face of the leaf. The basic principle behind this calculation is that the number of lines on every folio of a single work is almost equal. Similar is the case for the number of letters. That is why grantha-saṃkhya is calculated according to the above said formula. The scribed folios fastened together is known as a manuscript bundle. It can be a single work (grantha) or more than one work. This type of manuscript bundle is known as 'codex' and such bundles are called 'codices'. Loose folios of some manuscript work might be found with some other work or may be obtained as single leaves. They are called as 'stray folios'.

Each manuscript codex is placed on a wooden plank piece same in size of the manuscript folio. Similarly such a plank piece is placed at the top of the codex. These folio-like wooden plank pieces too have the holes similar to those found in the folios. They are used to protect the manuscripts and also for the convenience of fastening with the thread. They are made out of teak-wood, jack-wood or neem-wood. Instead of wooden plank pieces, in some manuscripts especially those obtained from places like palaces, ivory is found to be used and in most of them beautiful pictures are encarved. These pictures show some correlation with the text of the manuscript. In the case of paper manuscripts, instead of wooden plank pieces thick cardboards equal in size to the paper are used as protecting covers.

A manuscript work is written in a single language with a single script though there can be a few exceptions. In a few cases more than one language is found to be used in the same work. Similarly there are manuscripts in which more than one script is used even when the language is same. Large majority of the ancient manuscripts in India are in Sanskrit language. These Sanskrit manuscripts are found in the scripts of all Indian languages. Among the scripts found in the Sanskrit manuscripts Devanāgarī occupies the top position. The second place is for Grantha script since it was used to write Sanskrit in a major part of South India. Most of the Nandināgarī manuscripts are also in Sanskrit language. Though majority of the manuscripts found in India are subsequent to 15th century A.D. there exists fairly a large number of manuscripts commencing from 10th century A.D. Manuscripts prior to 10th century are also found but their number is very less. Among the manuscripts so far obtained, the earliest one belongs to 2nd century A.D and the script used in it is Kharoṣṭhī and the language is Prākṛt. This manuscript is found from Khotan (a town in the Uighur region of Sinkiang) in China. The second earliest manuscript seen is of 4th century A.D and the script used in it is again Kharoṣṭhī. It is obtained from Kashgar, a city lying at the Western end of the Tarim basin in the Uighur region of Sinkiang. But only a very few manuscripts of this sort belonging to a period earlier to 10th century are survived. In comparison with the Northern parts of India the number of archaic manuscripts survived in Southern India are less, the reason being the hot and humid weather conditions prevailing in this part of the country.

Peculiar Manuscripts

Some of the manuscripts are real monuments of the artistic talents of the scribe. Illuminated pictures can be seen in some manuscripts. A few such manuscripts are found in the collections of most of the leading manuscript libraries. Names of a few manuscript libraries in which such illustrated manuscripts are found are given below: Sarasvati Mahal Library, Thanjavoor; Bhandarkar Oriental Research Institute, Pune, Government Oriental Manuscripts Library, Chennai and Orissa State Museum, Bhubaneswar. Some such illustrated manuscripts are also found in the collection of ORI & Mss. Library, Thiruvananthapuram. They are Citrarāmāyaṇa (No. 12308), Citrabhārata (No. 11828), Rūpapraśna (No.19949), Rāmāyaṇacitra (A Tamil work in pencil sketches - No. 6650) and Prāsādacitram (pictures drawn on hand-made paper - No. 12330). Some of the illustrated manuscripts found in Sarasvati Mahal Library, Thanjavoor are listed below:

(1) Citrarāmāyaṇa - the first three Kāṇḍas of Rāmāyaṇa i.e. Bāla, Ayodhya and Āraṇya are found in miniature painting on paper.

(2) Prabodhacandrodayam - paper manuscript having painted pictures of the characters of the work.

(3) Gajaśāstram-This contains illustrations in coloured pictures of elephants.

(4) Aśvaśāstram-A detailed coloured album containing pictures of horses.

Prof. A.C. Sarangi reports that there are 408 illustrated manuscripts in the Orissa State Museum, Bhubanewar. *

A few other peculiar manuscripts of ORI & Mss. Library are cited here: A garland of palm-leaves in which 11th chapter of Devīmāhātmyam is incised in 15 beads is an artistic piece of very high order. Each bead is made out of palm-leaf pressed against two ingeniously worked out knots and shaped like rudrākṣa. The size of each bead is also of a rudrākṣa. It is kept in an onion shaped artistic wooden box which in itself is a piece of art. Another curious work is the manuscript of Akṣarapraśna (No. 18936). Here the work looks like a traditional palm-leaf fan. The palm-leaves are fixed at one end by means of a rod. The leaves can be moved forward and backward.

The letters of some manuscripts are miniature in size. Mārakaprakaraṇa (No. 11247) of the ORI & Mss. Library is an example for the same. The letters of this work are microscopic in nature. It consists of 30 or more lines in a single side of a folio. Another example for microscopic writing is Śivaparapañcaratnaśloka found in the Sarasvati Mahal Library, Thanjavoor. To the naked eye it appears as a śloka in Devanāgarī script. But with the help of a microscope it can be seen that each letter is modelled out of the word Śiva repeated in hundreds.

Some of the records such as letters, granthavaris etc. are found to be written on unprocessed raw palm-leaves. The folios of some such manuscripts have a length of 3 to 4 feet.

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* Proceedings and transactions of the All India Oriental Conference, 40th Session, 2002, p.148.

The unprocessed manuscripts are not intended to be preserved for a longer period. As already stated, palm-leaf manuscripts are of different sizes. The maximum length of a manuscript in palm-leaves found in ORI & Mss. Library, Thiruvananthapuram is 30 inches. The works Mahābhārata (No. 19374) and Jātakaphalaviśēṣanirūpaṇa (No. 19891) are of this type. The maximum width of a folio for a palm-leaf manuscript found in this Library is 2.75 inches. The work in which it is found is Bhāgavatastotrasamuccaya (No.20215). Largest manuscript work found in ORI & Mss. Library, Thiruvananthapuram is the Tamil work Kandapurāṇa (No. 3883), having 611 folios. The bundle is arranged in such a way as to have 2 feet length and 2 feet width. However, there are compilations of pañcāṅgas in this Library having 1433 folios (No. 8270-A) and 1279 folios (No. 8270). They are in the form of 'curuṇas' (manuscript rolls). The smallest manuscript of this Library is the 11th chapter of Devī-māhātmyam (No. 16702) containing only 8 folios the length of which is 2 inches and the width is 1 inch. According to Shivaganesha Murthy, in the stock of Oriental Research Institute, Mysore the smallest palm-leaf manuscript is of the size 4x2 cms and the longest one is having a length of 120 cms.

Chapter VI

COLLECTION OF MANUSCRIPTS

One of the most urgent tasks of Manuscriptologists is to collect the manuscripts from places where they are not kept with sufficient care. If not, they may be lost for ever. Most of the private collections are of this sort. Palm-leaf manuscripts are found even now in many of the ancient families and in centres of worship. Except in a few cases they are on the brink of total ruin. For the safety of the manuscripts and for their wider use by the scholarly world, such manuscripts need to be kept in the reputed manuscript libraries. The collection of manuscripts is not an easy task. Rules or procedures commonly applicable cannot be formulated since each case is different from the other. The places where manuscripts are found are termed here as 'manuscript locations'. The owners of manuscripts are referred to as 'manuscript custodians'. The person who is engaged in the identification of manuscript locations and the collection of manuscripts can be called 'manuscript collector'. The persons who inform the manuscript locations can be termed as 'informers'. The term informer is used here in a broader sense to include the persons who introduce the manuscript collector to the custodians or act as a connecting link between the custodian and the collector.

History of Manuscript Collections

Before the introduction of printing and the subsequent establishment of libraries of printed books, manuscripts were the major source for the dissemination and advancement of knowledge. There were large collections of manuscripts in places like palaces, residences of Zamindars, temples and monasteries. In addition, manuscripts are found in the families of priests, scholars and professionalists like astrologers, traditional architects, practitioners of Indian medicine etc. As soon as the importance of Sanskrit language and its relationship with other languages of Indo-European family were known to the Westerners, they took active interest in the study of Sanskrit language and consequently in the study of Indian culture in toto. Some of the European scholars and British officials of India took a fancy in collecting curios from India. They showed particular interest in securing ancient manuscripts. British Government gave ample support to them. These Europeans took away the manuscripts and other curios collected by them to their home lands. Subsequently there arose an awareness in England for preserving such valuable treasures brought from India and the need for their access to scholars and academicians. Thus arrangements were made to keep and preserve them in the India Office Library, London and other similar institutions. During this period i.e. in the 19th century, European Scholars began to show keen interest in the literatures of Sanskrit including the technical works. This resulted in frequent demands on India Government for ancient manuscripts of this country from different parts of the western world. Due to such tremendous pressure from various corners, the Government encouraged the collection and preservation of ancient Indian records and literary works. The statement of Mr. Whitely Stokes while sponsoring the Governmental scheme of collecting manuscripts in 1868 was a clear evidence showing how much interest Westerners had in the collection of Indian manuscripts. He wrote as follows: "To Europe we should send everything obtained in working this scheme—original manuscripts, copies, extracts; for in Europe alone are the true principles of criticism and philology understood and applied; and 50 years hence, in Europe alone will any intelligent interest be felt in Sanskrit literature. There will then, it is safe to say, be as few Sanskrit scholars in India as there are Greek scholars in Greece." * The assumptions and predictions of Whitely Stokes were proven to be incorrect. But at the same time it was a proof of the enthusiasm and faith with which Westerners like him had undertaken the task of rescuing the ancient manuscripts from ruin and the eager to create a solid foundation for the indological studies in the West. The interest shown by the Indian Government and the Western scholars had a catalystic effect on the Indian scholars too in the field of manuscript collection. The attempts for collecting manuscripts and publishing them in India itself were started by the Indian and European scholars. In this regard, the services of Bühler, F. Keilhorn, Burnell, Rajendra Lal Mitra, R.G. Bhandarkar and Hara Prasad Shastri are to be gratefully acknowledged. The efforts in this direction in the early part of the 20th century by people like Ganapati Shastri, Sambasiva Shastri and R.A. Shastri are also to be remembered. The Provincial Governments gave enormous support to the efforts of collection and publication of

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* Souvenir, Oriental Manuscripts Library, 1949, p.3.

manuscripts. Because of the dedicated efforts of scholars and their success in this field, separate libraries for manuscripts came into existence at different places in India. The Governments of Bombay, Bengal and Madras gave the lead in establishing manuscript libraries. Other provinces and princely states followed them. Sarfoji Maharaja's Sarasvati Mahal Library, Thanjavoor; Bhandarkar Oriental Research Institute, Pune; Government Oriental Manuscripts Library, Chennai; Oriental Manuscripts Library, Mysore; Oriental Research Institute and Manuscripts Library, Thiruvananthapuram are a few such examples to mention.

These Institutions were established not only for the collection of manuscripts but also for the publication of important manuscripts. This gave rise to many serial publications of Sanskrit and Pali texts in the second half of the 19th century and in the beginning of the 20th century. Bibliotheca Indica (Calcutta), Bombay Sanskrit Series, Ānandāśrama Sanskrit Series (Pune), Bibliotheca Saṃskṛta (Mysore), Kāvyamālā (Bombay), Advaitamañjarī Series (Kumbhakonam), Banarese Sanskrit Series and Trivandrum Sanskrit Series are some of the major publication series of this category. The processes of manuscript collection and establishment of manuscript libraries are still going on.

In this connection it is to be remembered that some of the kings of the princely states of India had taken keen interest and were models for others in collecting manuscripts from different sources. For instance, the kings of Travancore had shown great interest in the collection and preservation of manuscripts. It can be seen that Shri Ayilyam Thirunal Ramavarma Maharaja (1860-1880) issued an order for collecting the manuscripts from private possessions and to keep them in the Palace Library. Shri Karthika Thirunal Ramavarma Maharaja (1758-1795) as a Yuvaraja had taken possession of all the manuscripts from the principality of Ambalappuzha when that territory was conquered and added to Travancore. It was during the period of Shri Moolam Thirunal Maharaja (1885-1924) the Trivandrum Sanskrit Series commenced i.e. in 1903 under the editorship of Dr. T. Ganapati Sastri. Also it was during Moolam Thirunal's reign, the manuscript library of Thiruvananthapuram came into existence as a separate Department in 1908. Like the Travancore kings some other rulers of the princely states too had taken much interest in the collection and preservation of manuscripts. An important name to be mentioned in this regard is Sarfoji Maharaja of Thanjavoor.

Manuscript Custodians

The custodians of manuscripts can be broadly divided into two categories (1) Institutional and (2) Non-Institutional. Institutional custodians are the institutions which possess manuscripts. These institutions can be of two types: (1) Manuscript Libraries instituted for the specific purpose for collection, preservation and publication of manuscripts. (2) Educational or religious institutions whose main field of activity is not the preservation and publication of manuscripts. Some of the language departments of Colleges and Universities and Ashrams of various religious sects belong to this second category. Among them only a very few institutions have infrastructure facilities for the preservation of manuscripts.

The non-institutional custodians are certain families and individuals. Some families in India have a tradition of persuing studies on specific subjects such as Āyurveda, Vedānta, Mantra, Tantra Śilpaśāstra, Jyotiṣa etc. Manuscripts on such subjects may be found even now in such families. Certain individuals too possess manuscripts which are entrusted to them by others. Generally speaking, manuscripts belonging to the non-institutional custodians are not cared properly and are almost in ruins. Manuscripts of these private custodians are to be collected urgently so that they may not be lost for ever.

The attitudes of the custodians vary and hence a uniform approach is not possible in the collection of manuscripts. Some people donate the manuscripts voluntarily to reputed manuscript libraries. But such custodians are only a few and most others are reluctant to part with their possessions of manuscripts. A few custodians donate the manuscripts after some persuasion. A third category demands money. Yet another group of custodians will not give the manuscripts either as donation or by receiving payment. Some of the misconceptions do play a mischievous role which stand in the way of getting the manuscripts. Manuscripts are considered as sacred by many and hence in many of the Hindu families of Kerala, palm-leaf manuscripts are kept before the Goddess Sarasvati during Navarātri days. Also in some houses it is a regular practice that manuscripts of sacred works, at least a few of them, are kept in the prayer (pūjā) room. Many of them are in ancient scripts like Grantha, Nandināgarī etc. and most of the custodians are unable to read them. As a result, it may so happen that some of the manuscripts kept in the prayer room do not have any bearing on divinity. For instance in one place it was seen that in the prayer room three palm-leaf manuscripts in Grantha script were kept in front of the picture of Goddess Sarasvati. Though the family members were unwilling to donate the manuscripts, permission was given to inspect them. It was surprising to see that all the three manuscripts were on 'abhicārakarma' (black magic). Another instance illustrates an extreme case of blind belief. A student reported regarding the possession of some manuscripts by one of his close relatives. The custodian is an old lady who stays alone since her sons and daughters are abroad. In response to the request for donation of manuscripts, the custodian replied that she will not part with those manuscripts as long as she is alive. She further added that in the eventuality of her death cremation is to be done having those 'holy manuscripts' kept on the body. Though not have any direct experience, it is heard that even today in many parts of India in certain families only people belonging to their own caste or higher to them are allowed to enter the manuscript room. Such restrictions create problems for manuscript collections. Another group of people have a feeling that the manuscripts in their possession can fetch a substantial amount if sold to foreigners and it is highly difficult to tackle them. Some other custodians who belong to the families traditionally professed in Vaidyaka, jyōtiṣa, Vāstuvidya etc., though unable to read the manuscripts in their custody show reluctance in giving the manuscripts on the optimism that they can be made use of by their descendants in future. There were instances in which even highly educated people expressed unwillingness in donating the manuscripts. In some cases the reason appears to be due to their feeling that there may be some hitherto unknown works among their manuscript collection and such works are to be brought out by them and not by anybody else. There are instances in which a custodian of manuscripts is not the sole owner. The manuscripts might be a common property of all the members of a large family in which the present custodian is only one among them. He has no special right on the manuscripts and hence unable to donate or sell them without the approval of other members. In such cases it is difficult to contact all the members of such a large family. The number of members may even exceed hundreds and may be settled in different places and a few of them may be even abroad. In one such case near to Palghat, after several trips for meeting the members, most of the members agreed to donate the manuscripts to ORI & Mss. Library, but finally that could not materialize due to the objection of a very few of them. By citing a few instances of hardship one should not in any way dispirited. Such unpleasant experiences should instill more courage, eagerness and enthusiasm in one's mind so as to pursue the field work more vigorously. The fact that the work is done for a national cause will automatically give moral courage and mental satisfaction for doing field work for manuscript collection. Anyway it may be noted that some of the custodians are only quite glad to hand over their possession of manuscripts to some reputed institutions so that they may be of much use to a lot of interested people. A few of them, even by spending from their own pockets, come over to such institutions and donate the manuscripts voluntarily. It is understood that a good number of such donations are obtained every year to institutions like Oriental Manuscripts Library, Chennai and Sarasvati Mahal Library, Thanjavoor. Such voluntary donations of manuscripts and rare printed books are obtained occasionally to the ORI & Mss. Library, Thiruvananthapuram also.

Requisite Qualities of a Manuscript Collector

The person engaged in the collection of manuscripts needs to have the following qualifications:

1. He should have a sound knowledge in the cultural and literary traditions of the region.

2. He should possess pleasing manners and should be capable enough to impress upon the hearers.

3. He should have a thorough understanding of the importance of manuscripts and should be capable enough to convince the custodians the danger of complete loss of the manuscripts if not cared them properly. Also he should be capable enough to enlighten the custodians the service they do to researchers and academic community if the manuscripts in their custody are entrusted with some good institutions.

4. It will be advantageous if the person who is engaged in the collection of manuscripts has wide social contacts.

5. It may be better for him to be proficient in ancient scripts of the concerned state. Usually the custodians are very much interested in knowing the details of the manuscripts they would like to donate. Also due to curiosity very often they ask the manuscript collector to read at least some lines from those manuscripts which are in ancient scripts.

6. He should be honest, trustworthy and gentle in nature. Telling lies or posing as a big Officer will only adversely affect the chances of getting manuscripts from any custodian.

7. He needs to have both courage and patience for encountering unforeseen problems or obstructions come across during the field work.

8. He should be in the habit of keeping punctuality in appointments or else that may cause inconveniences to the custodian and to the people who volunteer to help him in his venture. It will automatically invite their displeasure and may even cause irreparable damage to the intended mission.

Field Work

Before the actual commencement of the fieldwork for manuscript collection, it is advantageous if some preliminary procedures are carried out. A few such procedures are discussed below:

1. Information on Manuscript Locations

For collecting manuscripts from private custodians, the first step is to get information regarding with whom or in which families manuscripts may be found. If possible the information is to be gathered from every village, town and city. For doing this one needs the help of various people like the authorities of local bodies, teachers and general public. It does not mean that one has to wait until one gets complete information from all places. Gathering information on the manuscript locations is a continuous process.

2. Collecting detailed information about the custodian

As soon as it is known that manuscripts are available in the custody of a person, the first thing to be done is to get as much information as possible on the custodian such as his general nature, family background, social contacts, names and addresses of some of his intimate relations and friends. Prior information on such details will be of great help when the manuscript collector approaches the custodian of manuscripts.

3. Services of suitable intermediaries

When information is received regarding the possession of manuscripts with somebody, the manuscript collector has to contact him as early as possible. Direct approach to the custodian is possible in some cases and in some other cases it is better to contact the custodian through a person closely known to him.

4. Intimation through Official letters

Sending an official letter by the Head of the Institution to the custodian requesting him to donate the manuscripts may have a positive effect. In the letter it is better to include a brief write up on the institution highlighting its role in the preservation and publication of manuscripts and the services rendered to researchers and scholars in different branches of knowledge. The name and official address of the person (or persons) to whom the task of manuscripts collection is entrusted can also be informed to the custodian if possible in the first letter itself or else through a subsequent letter. Such a letter not only enlighten the custodian the services he does for the academic community and also for the preservation of manuscripts in case of his donating them to an institution but also gives some official authority to the manuscript collector. In this context it is important when considering the fact that there are reports of fraudulent collections of manuscripts by making use of the names of reputed institutions.

In the actual field situation it is better to have a team of manuscript collectors consisting at least of two people. While doing the field work, the manuscript collector needs to keep his identity card and the official letter from the institution stating that he is deputed from the concerned institution for the job of collecting manuscripts. If manuscripts are obtained from a place, then on the spot itself a temporary receipt for the same is to be given to the donor. If there are only a few manuscripts and the works can be identified easily, then even in the temporary receipt the list of works obtained can be specified. If there are more manuscripts or the works cannot be easily identified, it may be difficult to furnish the list of all manuscripts collected but even then, to the extent possible it is to be done. In any case, the number of codices collected can be shown in the receipt. Subsequently an official acknowledgement letter and receipt of the works are to be sent to the donor by the Head of the Institution. In this case the details of the manuscripts collected such as the title of the work, author, language etc. can be shown. If there is any delay in preparing such a list then without waiting for it the acknowledgement of the receipt of manuscripts needs to be sent as expeditiously as possible. There it should be mentioned that the details of the manuscripts obtained will be intimated later.

Chapter VII

CATALOGUING

The collected manuscript codices are to be carefully scrutinized for which they are to be read carefully. It may be possible that some of the folios in a codex may be unconnected with the works contained in it and may be of other works. Due to careless handling of the manuscripts or due to wear and tear, the tying threads of some codices might be broken and different manuscripts might be mixed up. Also some loose folios might be obtained which are not part of any of the manuscript works collected or even any work so far known. Such folios are called stray folios. Thus after the collection of manuscripts, the Manuscriptologists have a tedious job in properly arranging the loose folios of manuscripts. Such folios are arranged based on the following factors:

(1) Content of the folio
(2) Colophon if any
(3) Size of the folio
(4) Folio numbers
(5) Number of lines in a folio
(6) Script used
(7) Style of language used
(8) Size of letters
(9) Characteristics of writing

After proper arrangement of the folios of each work the next task is to attach 'protocol' to each and every manuscript work. The relevant details of the manuscript such as the title of the work, name of the author, script, subject, date, granthasaṃkhya and extent of the work are entered in a separate folio. It is attached to the codex as the facing folio. These relevant details of a manuscript given in the facing folio are known as 'protocol'. In the case of a codex containing more than one work the details of each work are given in separate folios. All these are attached as facing folios and their arrangement is in accordance with the order of the works given in the codex. In the case of paper manuscripts the protocol is glued on to the outer cardboard (facing) of the manuscript. In the case of transcripts all the above said details together with the name of the scribe, date of copying, the manuscript from which it is copied and the source from where the manuscript is obtained are shown. Very often a transcript after copying was compared with the manuscript from which it was copied. In such cases the name of the person who helped in reading the manuscript for comparison is also given as a note. The protocol is very helpful for those who would like to peruse the manuscript.

The Catalogues can be mainly of four types: (1) Simple Index (2) Alphabetical Index (3) Subject-wise Index (4) Descriptive Catalogue. In the preparation of all types of cataloguing the first task is to enter the details of the work in cards. For Simple Index the first entry in the card is the title of the work. In the case of Simple Index the author's name, subject of the work and the source from where it is obtained will be entered in the card. For Alphabetical Index, information regarding serial number, title of the work, name of the author, subject, number of granthas, script, material, extent of the work and remarks if any are entered in the card. Under remarks the condition of the manuscript, the date of the manuscript and the availability in other centres are noted. The manuscript number (accession number) should also be given. For the preparation of Descriptive Catalogue, printed proforma is used in which all details regarding the manuscript are entered. The Subject-wise Index is intended for knowing the works in each subject

1. Simple Index

The simple index is useful in knowing the title of a work, its author and the source from which it is obtained. It does not provide further details and as such its scope is limited. This index arranged in alphabetical order is useful for the preparation of other types of indices and catalogues.

2. Alphabetical Index

The filled up cards are arranged in the alphabetical order. In the Alphabetical Index of Sanskrit Manuscripts of ORI & Mss. Library, the arrangement is as follows:

The serial number in the first column shows the arrangement of the manuscripts in cataloguing and enables one to see the total number of manuscripts in the collection. In the next two columns the titles of the works with marks of identification in brackets such as Vyākhyopeta, Keraḷabhāṣōpeta etc. are given in the Sanskrit alphabetical order both in Devanāgarī and Roman Scripts. The name of the author of the work or of the commentary or both are noted in the next column. Where the author or the commentator is not known, mere dots are given in the respective rows. The

Subject of the work is given in the fifth column. For clarity the works have been classified under different subjects such as Veda, Vedalakṣaṇa, Āgama, Mantra, Upaniṣad, Tantra, Purāṇa, Itihāsa, Śrauta prayoga, Gṛhya, Gṛhyaprayoga, Dharma, Śānti, Māhātmya, Vrata, Bhakti, Śikṣā, Vyākaraṇa, Nirukta , Chandas, Jyotiṣa, Vaidyaka, Vedānta, Nyāya, Yoga, Mīmāṃsa, Kāvya (Prākṛta kāvya, Campū kāvya, Gadya kāvya), Nāṭaka, Alaṅkāra, Nāṭyaśāstra, Kāmaśāstra, Nīti, Śilpa, Gīta, Rasavāda, Kośa, Jainamata, Stotra, Subhāṣita, Sāmudrika and Vividha (Miscellaneous). In the next column the number of granthas in each manuscript is given. The script, material and extent of the work are noted in the seventh column. This library has Sanskrit manuscripts in various scripts like Devanāgarī, Nandināgarī, Malayalam, Marathi, Tamil, Telugu, Grantha, Kannada and Bengali. The material of the manuscripts is either palm-leaf or paper. The remarks column gives details connected with the manuscript such as the condition of the codex (whether old, worm-eaten or damaged), availability in other South Indian libraries, date of copying the manuscript as found in the colophons, number of commentaries on the same work in the collection and the number of the work in the Descriptive Catalogue of Sanskrit Manuscripts of ORI & Mss. Library. In the last column the manuscript number affixed to each manuscript in the collection is given so as to have an easy retrieval of manuscripts from the library shelves. So far seven volumes of Alphabetical Index of Sanskrit Manuscripts are published from ORI & Mss. Library. Similarly Alphabetical Index of the Malayalam manuscripts is published in a single volume. In the ORI & Mss. Library, Thiruvananthapuram, the first classification of the manuscripts is done based on language. The manuscripts are classified into Sanskrit, Malayalam and Tamil. Then separate cataloguing is done for the manuscripts in each language.

3. Subject-wise Index

For the preparation of subject-wise Indices, the index cards of the manuscripts are prepared for different subjects. The cards are sorted subject-wise and then the arrangement is done alphabetically for each subject. The classification of subjects is not too narrow. Manuscripts in different topics are brought under some major subjects. A few manuscripts in which the subjects dealt with may not come under the specified major subject classification. In such cases they are grouped under miscellaneous (vividha). The details entered and their order are almost similar to that of an Alphabetical Index. From the ORI & Mss. Library a subject-wise Index of Malayalam Manuscripts is published in the above pattern in two volumes.

4. Descriptive Catalogue

In Descriptive Catalogues all possible details are shown in an abridged way. In addition to the details such as the title of the work, author, language, subject, script, material of the manuscript, condition of the manuscript, date, list of other libraries where it is available etc., in a Descriptive Catalogue a brief summary of the contents of the manuscript is also given. A few lines both from the beginning and end of the work are also given so as to facilitate a reader to ascertain whether a work under the same title is different or same.

Colophons found in the manuscripts and relevant remarks on manuscripts will also form part of a Descriptive Catalogue.

From Thiruvananthapuram 18 volumes of Descriptive Catalogues of Sanskrit Manuscripts were published of which 8 volumes were published under the Maharaja's Palace Library * and 10 volumes were published under the Curator's Office *. Similarly 7 volumes of Descriptive Catalogues of Malayalam Manuscripts were published of which 2 volumes were from Maharaja's Palace Library, 3 volumes were from Curator's Office and 2 volumes were from Oriental Research Institute & Manuscripts Library.

5.Catalogus Catalogorum

A Catalogus Catalogorum is a catalogue of the existing catalogues of manuscripts published from various manuscript libraries. For getting details of a manuscript, if a perfect Catalogus Catalogorum is available, there is no need to go through the laborious process of referring the catalogues of different manuscript libraries. The work of this sort was first brought out by Theodor Aufrecht in three volumes. He named these volumes as Catalogus Catalogorum. The first volume was published in 1891 at Heidelburg. Both second and third volumes were published from Bonn in 1896 and 1903 respectively. These volumes brought out by the compilation of manuscript catalogues of different institutions available during that period are of immense value. But it may be noted that they are not error-free. Some omissions and mistakes had crept in. The Madras University is publishing a

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* Earlier names of Oriental Research Institute and Manuscripts Library

'New Catalogus Catalogorum Series'. The first volume of which was published in 1949. So far fourteen volumes of New Catalogus Catalogorum have been brought out.

6. Script-wise Index

Script-wise indices of manuscripts are also brought out by some institutions. For example, Sarasvati Mahal library, Thanjavoor has published the index of Nandināgarī manuscripts. Similarly a catalogue of palm-leaf manuscripts in Tigaḷāri script is published by K. Gunda Jois of Keladi Research Centre, Karnataka. An index in a single script may have manuscripts in different languages. For example an index of manuscripts in Malayalam script may have works in both Malayalam and Sanskrit languages. If large number of manuscripts are found in different scripts like Grantha, Nandināgarī, Devanāgarī, Telugu, Kannada, Malayalam, Tamil etc., then separate script-wise indices can be brought out comprising the details of all the manuscripts in each script.

Chapter VIII

EDITING AND PUBLISHING

The manuscripts preserved in libraries can be utilized only by a limited number of people. For making their contents reach to a wider circle they are to be got published. In addition, the materials of the manuscripts cannot be kept safe for ever and hence they are to be transferred to print media for future generation. Then a question arises. What way the manuscript is to be published ? There exist three possibilities:

1. The text of the manuscript can be published as such without making any change.
2. The manuscript can be published after noting down the mistakes found in the text, such as scriptual, lexical , grammatical, metrical, etc.
3. All the available manuscripts of a work which is to be published are carefully analyzed and from them a reconstruction of the text is made. This reconstructed text might be the same or very near to the author's intended text and this text is got published. The second and third possibilities require editing of the text.

In the second case only common type of editing is required, whereas in the third case the text is to be edited critically. In the case of publication of manuscripts, usually the third possibility is resorted to. For doing a critical edition, one requires a sound knowledge in the principles of Textual Criticism. A detailed discussion on the principles of Textual Criticism or on Critical Edition is not attempted in this work due to two reasons: (1) It is a wider topic and so an elaborate discussion cannot be done within a few pages. Its subject matter can be explained in full only with the help of another book. (2) S.M. Katre's "Introduction to Indian Textual Criticism" has covered all the important aspects of textual criticism and every person engaged in the critical editions of Indian texts ought to master this small but pioneering work. In addition, V.S.Sukthankar's Prolegomena to the critical edition of the Ādiparva of the Mahābhārata gives a clear understanding of some of the problems in the critical editions of Indian texts especially the epics and purāṇas. For the above reasons, though critical edition is an important topic in Manuscriptology, only a few observations, mostly based on Katre's work, are made here just to initiate further reading on the topic.

Reading the Manuscripts

Both for cataloguing and editing, it is essential that one should know what is recorded in a manuscript for which one has to read the 'text'. A text means " a document written in a language known, more or less, to the inquirer, and assumed to have a meaning which has been or can be ascertained." * Reading manuscripts is important not alone in cataloguing but also for editing. For a manuscript is to be read thoroughly, the knowledge of the script in which it is written is quite essential.

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*Introduction to Indian Textual Criticism, S.M.Katre,1954, p. 1.

A script unit (letter, ideograph etc.) is in reality a construction, the constituents being graphs. In some cases not only the total construction of the graphs shows correlation with linguistic units but some constituent graphs also may have equivalence as for indicating voicing, aspiration, vowel length, gemination etc. In instances where some letters are very difficult to be read, the patterns of combinations of graphs together with the knowledge of their linguistic equivalence help one to have a proper identification of doubtful written letters found in manuscripts. Even if the script is known, one has to encounter a lot of problems in reading manuscripts. In some instances letters may not be legible or may be unclear due to the sprawling way of writing. To overcome such difficulties manuscripts are very often read with the help of a magnifying lens. Due to wear and tear of manuscripts some of the words or letters may not be clear. Worm-eating may cause holes and thus loss of letters in manuscripts. In some old manuscripts, portions of a folio may be torn off or damaged creating problems in reading. The pattern of writing in manuscripts i.e. as a continuous chain of letters without showing word borders or sentence boundaries, makes the reading much difficult. The Manuscriptologist has to identify the word and sentence boundaries and hence the text is to be read carefully. For this, one needs to have the mastery over the language. In addition, one has to depend upon the general distributional characteristics of units like the phonemes and morphemes and also of the intonation patterns of the language in which the text is written.

Textual Errors

There can be errors even in an autograph written in author's own handwriting such as erroneous words or passages, omission of words, letters or phrases left out by mistake and scriptual errors. In copies written by a scribe the scriptual errors, misplaced corrections, errors due to the non-legibility of letters, inability to understand the meaning of the forms etc. also cause errors in transcription. Similarly if the copying was done by hearing the dictation of a text, then the hearing impediments of the scribe might have caused errors in transcription. Similarly any deficiency in the eye sight of a scribe tends to make errors in copying.

Generally speaking the errors are less in an autograph. Mostly, autographs might be non-extant at present and the extant manuscripts might be transmitted copies. Chances of occurrence of errors become more and more in subsequent (transmitted) copies. ie. the number of errors increases in each and every transmission. In short, the original text, though not error-free contains fewer mistakes when compared with a transmitted text.

It is also to be noted that any manuscript may get damages due to span of time creating problems in the identification of textual elements which result in committing mistakes in copying. The errors in a transmitted text may be those which occur unintentionally while copying or those made by the scribe intentionally. The intentional corruptions are due to the scribe's 'corrections' to the forms found in a manuscript from which the copying is done since according to his judgement some of the forms existed in the source manuscript are incorrect, though in reality their original forms are the correct ones.

The texts are transmitted in two ways (1) licensed or protected transmission and (2) unlicensed or haphazard transmission. When a text is copied under the direction of the author or of any other scholarly person, it is a licensed transmission. Here control is exercised on the copyist. Even then it is possible to have some corruptions while copying. If a text is copied without having the supervision of the author or of any scholarly person, it is an unlicensed or haphazard transmission. Most of the transmitted copies belong to this category. In unlicensed transmissions, the possibilities of corruptions are more.

Two types of errors are possible while copying (1) Visual and (2) Psychological. Errors such as substitution, elision, addition etc. come under visual errors, whereas many of the changes effected by the scribe due to his own psychological factors such as preference to a lexical item or aversion to some forms etc. fall under psychological errors. The corruptions occurring to the transmitted texts classified by Hall and adapted by Katre are given below: *

I Confusions and attempts made to remedy them

(1) Confusion of similar letters or syllables

(2) Mistranscription of words

(3) Misinterpretation of contractions

(4) Wrong combination or separation

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* Introduction to Indian Textual Criticism, S.M.Katre, 1954, pp. 55-56.

(5) Assimilation of terminations and accommodation to neighbouring construction

(6) Transposition of letters, words and sentences and dislocation of sentences, sections and pages

(7) Mistranscription of Sanskrit into Prākṛt or Vernacular and vice-versa

(8) Mistakes due to change of pronunciation

(9) Confusion of numerals

(10) Confusion in proper names

(11) Substitution of synonymous or familiar words for unfamiliar

(12) New spellings substituted for old ones

(13) Interpolation or the attempt to repair the results of unconscious errors

II. Omissions

(14) Haplography or the omission of words or syllables with the same beginning or ending

(15) Lipography or simple omission of any kind

III. Additions

(16) Repetition from the immediate or neighbouring context

(17) Insertion of interlinear or marginal glosses or notes

(18) Conflated readings

(19) Additions due to the influence of kindred writings

CRITICAL EDITION

The definition of the text (quoted in this chapter under Reading the Manuscripts; p.60) explicitly points out that it is a written document in a language having representation to both expression and content planes of the language. * Hence in the editing of a text sufficient attention is required on the above two planes of language. A manuscript text is critically edited following the principles of Textual Criticism. As Katre points out, the sole aim of Textual Criticism is the interpretation and controlling of the evidence contained within the manuscripts of a text or in documents so as to enable one to recover the authentic text or to determine as nearly as possible to the text written by the author himself. Thus the objective of Textual Criticism is the restoration of a text, to the extent possible, to its original form. By 'original form' what is meant here is not exactly the same as one written by the author but it is the form intended by the author. This explanation to the original form is essential since it is possible to have scribal, grammatical and such other errors even in a text written by the author himself but they are not intended by the author. According to one of the views there exist two processes in Textual Criticism (1) Recension (Recensio) and (2) Emendation (Emendatio). According to another view Textual Criticism consists of four processes. They are (1) Heuristics (2) Recension (Recensio) (3) Emendation (Emendatio) and (4) Higher Criticism. The first three together is called as Lower Criticism.

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* Expression plane is characterized by sequences of letters, ideographs etc.

I. HEURISTICS

An important preliminary step in the editing of a manuscript text is gathering information on that. Gathering information can be of two types :

1) Gathering information on the availability of the manuscripts of the work chosen for critical edition. For this purpose Catalogus Catalogorum can be consulted. In addition there can be manuscripts of the said work in private possessions or in some other centres the availability of which might not have got entry in any catalogue. Information is to be collected from such places also.

2) Securing manuscripts or their copies of the work to be critically edited. In the case of copies, preference is given to those which are obtained with the help of machines such as xeroxing, microfilming, computer scanning etc. Places from where copies are not obtained, it is advisable to go over there and personally refer them. In some cases even such direct reference may not be possible due to the non-co-operation of the custodian or due to some other reasons. In such cases if any oral information is obtained either from the custodian or anybody who could peruse the manuscript earlier, then it can be noted. Such information may be of some use at a later stage.

Collation

After gathering manuscripts, the next step in heuristics is the collation of collected manuscripts. Collation of a manuscript requires observation and recording of all the forms found in the text which may help in determining at least an approximation to the original. It needs thorough scrutiny of the gathered manuscripts. Some of the manuscripts may be copies from a common source and hence may not exhibit many variations. Similarly, some highly corrupted manuscripts too may be obtained, which may not be of much use for a study based on the comparison of manuscripts. A few other manuscripts may be incomplete. Such incomplete manuscripts may be of different types such as only a few leaves might be lost or the omission may be even that of some Adhyayas in full. In some extreme cases the manuscript may contain only a very small portion of the work.

The manuscripts gathered may be of different periods, different regions and products of successive copying. From such collections a suitable manuscript is to be selected with which other manuscripts are to be compared. The manuscript so selected according to the initial satisfaction of the editor should contain the full text and also should be in a good condition. In collation all evidences are collected for arriving at the probable reading of the original text through a comparative study of the manuscripts. Thus in collation, manuscripts representing each and every version of the text are divided into smaller units such as a sentence of a prose, a line of a verse etc. In some cases even a part of a sentence or line of a verse may be taken for this purpose. By collation the genealogical relationship of manuscripts can be clearly understood. The critical material got by the collation of manuscripts of a transmitted text the evidence of which is used in critical recension is known as 'Critical Apparatus'.

For the collation of manuscripts following steps are usually adopted :

(a) The gathered manuscripts are sorted and for every manuscript, though not like protocol, identification labels are given. It can be done based on alphabets, numerals, abbreviations of the places from where the manuscripts are got, scripts used in manuscripts or combinations of all these or any other method by which each manuscript can be easily identified. Such identification labels are called 'Sigla' (Siglum - singular form). The variants and special characteristics seen in a manuscript are depicted with reference to its siglum. For example, suppose two manuscripts of a work are found in the Oriental Institute, Baroda one in Devanāgarī script and another in Gujarati script. Their sigla can be represented as either OIB-D and OIB-Gu or OIB-1 and OIB-2 or 1 and 2 or as A and B. If another manuscript of the same work is found at Adyar in Grantha script and yet another one at Oriental Research Institute, Mysore in Nandināgarī script they can be labelled as Ad. Gr and My-Nn or as 3 and 4 or as C and D. If three manuscripts are found in Bhandarkar Oriental Research Institute, Pune in Grantha script they can be shown as Bh. Gr -1, Bh. Gr-2, Bh. Gr-3 or as 5, 6, 7 or as E, F, G. If required any other suitable pattern can be followed which enables proper identification of these manuscripts.

(b) In reality autograph alone is non-transmitted and all other manuscripts are transmitted. However both in collation and recension, from among the extant manuscripts collected, if a manuscript to which other manuscripts, though of the same work, cannot be related for the transmission, then that manuscript is considered as non- transmitted. In that sense, among the manuscripts if one is non-transmitted and others are transmitted, then consider the non-transmitted as basic to which other manuscripts are to be compared with.

(c) From all available extant manuscripts, the one which is undamaged, legible, archaic and having relatively less number of errors is considered as the basic. In some cases it is to be done based on simple logic, common sense and discretion. The fundamental principle in deciding which one is basic is based on the degree of corruptions found. Fewer corruptions suggest more nearness to the original and vice-versa. It is due to the fact that number of corruptions increases in each successive transmissions. At the same time it is to be noted that if there is no error or errors are only very negligible then it may be a product of a scholarly scribe not faithful to the source manuscript.

(d) Suitable unit for comparison is to be determined. The text can be viewed as the totality of these units. For example in a prose work a sentence can be taken as the unit and in poetical text, the unit taken can be a stanza.

(e) Each unit from the manuscript selected as basic for comparison is to be written syllable by syllable in separate squares. For this a single sheet of paper can be used.

(f) Each syllable may be compared with those found in other extant manuscripts. Deviations found in each manuscript may be noted in the corresponding squares.

(g) In the left hand margin the siglum of each gathered manuscript will be given whereas the right hand margin is reserved for special remarks if any including addition of passages. Such remarks are given in suitable abbreviations.

(h) A comparative study is made and the results obtained are consolidated.

II. RECENSIO

It is the critical analysis of the results obtained by collation. Recensio attempts for the restoration of the text to that of the archetype. By 'archetype' what is meant here is "The original model or prototype, applied to the hypothetical common ancestor of a family or group of manuscripts. Ordinarily it is applied to any hypothetical common parent codex or any group of manuscripts or codices, irrespective of whether it is immediately derived from the autograph of the text before the breaking of its transmission into several strands or is only an intermediary hypothetical link in the transmission after the first division takes place in the transmission."* But this term is preferred to be used for the common source of all extant manuscripts. i.e. the term 'archetype' is generally used to refer to the common source from which the first transmission takes place. The intermediary common ancestors for the subsequent transmissions can be called the sub-archetypes. Yet another concept to be remembered here is 'recension' which in the words of Shivaganesha Murthy is the first line of division of transmission from the archetype and its secondary division is sub-recension. ** Through collation the genealogical relationship of the manuscripts can be clearly understood and it helps for the critical recension i.e. restoring the text, to the extent possible, to its original form.

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*Introduction to Indian Textual Criticism, S. M Karte,1954, p.90.

In the determination of genealogical relationship, the following points have to be born in mind :

(1) If two manuscripts exhibit same type of errors, then they are copies from the same manuscript. Generally omission of words and passages if common to two manuscripts then they indicate closer genealogical relationship between them.

(2) Identical forms point towards archaism and they can be considered as those found in the original. Between the two manuscripts, if larger agreement in the case of peculiar readings or in such other peculiarities are found, then those two manuscripts may be genealogically closer.

(3) In the normal circumstances the forms found common in majority of the manuscripts may be the protoforms. But discretion is required in applying this majority rule. For example, if there are eight manuscripts out of which five are copies from the same source manuscript written by the same scribe, two are from another source and the

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** Introduction to Manuscriptology, R.S.Sivaganesha Murthy,1996, p.194

third one is from yet another source manuscript. Here one cannot apply the majority rule and conclude that the forms found in the first five manuscripts are more archaic.

(4) When variant forms are obtained, if required, interpretation can be done with the help of written evidence.

(5) Through critical recension archetype is to be reconstructed and the genealogical relationship is depicted starting from the archetype. For critical recension and restoring the original text, anthologies, translations from one language to another, direct quotations found in later literature, adaptations, imitations including paradies, epitomes and ancient commentaries can be made use of. They provide subsidiary evidence for the reconstruction of the text to its archetype. From the results obtained a genealogical tree, which is otherwise known 'Stemma codicum' or 'Pedigree', can be drawn showing the interrelationship of the transmitted manuscripts commencing from the archetype to the available transmitted manuscripts depicting the intermediary divisions from sub-archetypes.

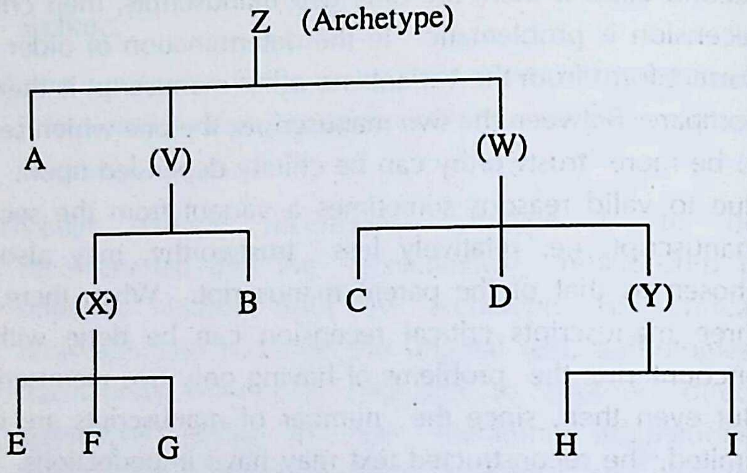
It may be noted that in recension, the editor has to first determine all the trustworthy manuscripts based on available evidence. A manuscript in full may be transmitted in two ways:

1) in one manuscript only (2) in more than one manuscript. If only a single transmitted manuscript is available it is called

the 'Codex Unicus' and genealogical method for critical recension is not applicable here. It is applicable only in the second case. If there are only two manuscripts, then critical recension is problematic. In the determination of older and correct form from the variants no other manuscript is there to compare. Between the two manuscripts, the one which seems to be more trustworthy can be chiefly depended upon. But due to valid reasons sometimes a variant from the second manuscript, i.e. relatively less trustworthy, may also be chosen as that of the parent manuscript. When there are three manuscripts critical recension can be done without encountering the problems of having only two manuscripts. But even then, since the number of manuscripts are only limited, the reconstructed text may have imperfections. For an ideal critical recension it is better to have at least five manuscripts out of which no two or more are copies of the same.

Suppose there are nine manuscripts out of which one is non-transmitted and the other eight are transmitted. Based on the results obtained through collation, their genealogical relationship can be depicted by a pedigree or stemma codicum as in diagram (1).

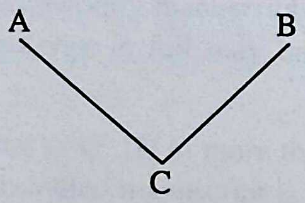
(1)



Here Z is the archetype and (V), (W) (X) and (Y) indicate sub-archetypes. A is non-transmitted manuscript. B,C,D, E,F,G,H and I are transmitted manuscripts. In this case none of the manuscripts is a resultant of mixing together of two or more different manuscripts.

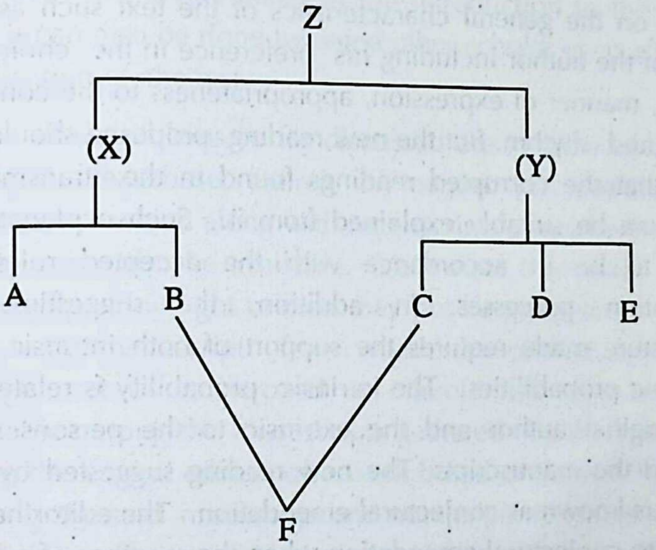
There exist many transmitted manuscripts which are the products of fusion of different manuscripts of the same text. This is called as 'conflation' of manuscripts. The conflation of two manuscripts can be depicted as follows:

(2)



Here C is a conflated manuscript. If there are both conflated and non-conflated manuscripts, then their representation will be as follows:

(3)



In the case of conflated manuscripts the genealogical method has only limited applicability.

III. EMENDATION

The archetype of the transmitted manuscripts obtained might be identical or very near to the original text, i.e the one intended by the author. But it is to be confirmed to the satisfaction of the editor i.e. the editor has to satisfy himself that the forms of the text restored through recension might be the ones intended by the author. In some cases none of the variants found in the transmitted manuscripts appear to be that of the original text. In such cases the editor has to suggest the probable reading and this is done through emendation. Unreliable elements can be seen even in the best manuscripts. Emendation is a systematic attempt to set aside some of the written forms found in manuscripts. It is done based on the general characteristics of the text such as the style of the author including his preference in the choice of words, manner of expression, appropriateness to the context, metre and rhythm. But the new reading proposed should be such that the corrupted readings found in the transmitted texts can be suitably explained from it. Such explanations need to be in accordance with the accepted rules of corruption processes. In addition, the suggestion or conjecture made requires the support of both intrinsic and extrinsic probabilities. The intrinsic probability is related to the original author and the extrinsic to the persons who scribed the manuscripts. The new reading suggested by the editor is known as conjectural emendation. The editor has to resort to conjectural emendation when the readings of a form found in the manuscripts, whether identical or variant, seem to be inappropriate; then the only possible way is to have conjectural emendation. However even in such cases one has to give the faithful representation of the forms found in the manuscript and the suggested new reading can be given either in brackets or in foot notes.

IV. HIGHER CRITICISM

Through higher criticism one provides all available information about the work, author and various other factors like social, political, cultural, geographical, economic etc. which might have influenced the author in varying degrees. It also makes an assessment of the language, style, literary aspects and such other characteristics related to the work. Though it is not very essential for the critical edition of a text, it presents a total picture of the work. Usually the higher criticism is done by the editor himself and the results obtained are incorporated in the introduction to the work. But it can also be done by some other scholar even after the publication of the text.

The problems so far discussed are in view of critical editions of texts based entirely on manuscripts. But there are instances in which along with manuscripts printed editions of a work may also be available. Very often the details of the manuscript which got printed may not be given in the book. The same manuscript from which the printed edition is brought out or its xeroxed or microfilmed copy may be available among the manuscripts gathered by the editor for doing the critical edition of a work based on manuscripts. If so, only the said manuscript and not the printed book will be used for collation. At the same time the fact that the manuscript(s) from which the printed edition is published will have to be specifically mentioned. If the printed edition is not same as any of the collected manuscripts then it too will be included for collation and will be treated just like any other manuscript. The siglum of the printed edition is usually given as PE. If there are more than one printed editions then they will be labeled as PE_1, PE_2, PE_3 etc.

Both oral and written transmissions can be seen for some texts. This is specially true in the case of epics and purāṇas. The oral transmission of a text may be in full or in part. Very often a text transmitted orally may have different versions in different regions or in different societies. In addition, orally transmitted texts are more susceptible to interpolations and corruptions. However, in the critical editions of written texts, the orally transmitted versions can be considered as supplementary evidence. For getting a clear understanding of certain usages found in manuscripts, at least in some cases the oral versions may be of some help. Above all, for higher criticism i.e. the fourth process in Textual Criticism, these oral traditions are of immense value.

Chapter IX

MANUSCRIPT LIBRARY

The manner in which manuscripts are stored is an important factor in the preservation of manuscripts. Major centres of their storage are the manuscript libraries.* An institution at which manuscripts are stocked and facilities are provided for their reference and study is called a manuscript library. The method followed in the arrangement of manuscripts in such a library is not exactly the same as one generally finds in a library for printed books. In manuscript libraries, similar to that of other libraries, an accession register is maintained. In this register the details regarding the date of possession of manuscripts, serial numbers, details of the manuscripts such as the title, language, author, script, number of granthas (grantha-saṃkhya), place from where the manuscript is acquired, the nature of its giving to the library i.e. whether as donation, by payment or as loan are recorded. The serial number given in the accession register is the accession number. It is also referred to as manuscript number.

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* The usage 'Manuscripts Library ' is also in existence and is more common when occurs as part of the name of an institution such as 'Andhra Pradesh Government Oriental Manuscripts Library and Research Institute ' (Hyderabad), 'Government Manuscripts Library' (Allahabad), ' Government Oriental Manuscripts Library' (Chennai).

Unlike printed books, the manuscripts are of different materials such as palm-leaf, birch-bark, paper etc. For adopting the methods of preservation, it is not advisable to have manuscripts in different materials kept in the same rack, shelf or almirah. The racks and almirahs of a manuscript library are to be so designed that retrieving a manuscript will not disturb the other manuscripts. The bottom of the racks, almirahs etc. should not make direct contact with the floor. In ORI & Mss. Library, Thiruvananthapuram the method adopted for the arrangement of manuscripts is a three fold one. i.e. (1) palm-leaf manuscripts, (2) paper manuscripts and (3) transcripts. They are arranged in accordance with the manuscript numbers. The concerned number is affixed to each manuscript. In addition, in each almirah or rack the numbers of manuscripts kept in them are shown.

Though not common, a few other methods can also be followed. (1) Manuscripts can be classified language-wise such as Sanskrit, Malayalam, Tamil etc. Their arrangement can be based on the serial order of the manuscript numbers. (2) Another possible method is to arrange the manuscripts subject-wise. It can be done in two ways. (a) A language-wise classification is done first and then under each language a subject-wise arrangement. It is a classification based on both language and subject. (b) In the second type of subject-wise arrangement, the manuscripts are not classified in terms of language. Instead, the classification is done based on the subjects only and the arrangements of manuscripts in the library are also done accordingly. In this type of arrangement, manuscripts in different languages and scripts may be found under each subject. However in most of the manuscript libraries subject-wise arrangement is not followed. The most preferred arrangement is based on both manuscript numbers and manuscript materials

In all the important manuscript libraries, Indices and Descriptive Catalogues of manuscripts are kept outside the library hall. A person who would like to refer to a manuscript has to go through the Indices first and then request for the manuscript he would like to refer to. If the manuscript is in good condition, it will be brought by the library staff. The person who makes the requisition for manuscript has to refer to it in a place usually outside but adjacent to the library hall. Generally it is done under the direct supervision of some responsible library staff. Unlike books the manuscripts are not issued to readers. Even the staff members of a manuscript library are not allowed to take a manuscript out of the library. In short, open access system is not followed in any of the manuscript libraries. To genuine researchers, if needed, most of the libraries give xeroxed or microfilmed copies of manuscripts. But it is done only if the condition of the manuscript is good so that there is no possibility for getting any damage to it either in xeroxing or microfilming. Also, in view of national interest or due to some other valid reasons, certain manuscripts are not given to anybody even for reference. There exist a few manuscripts of this category in the ORI & Mss. Library, Thiruvananthapuram. Similarly, if the request for manuscripts is not for bona fide research or such other academic purpose, permission is not given to take copies of manuscripts so as to prevent misuse of any sort.

Library Building and Infrastructure facilities

Though it is an important aspect in Manuscriptology, not much attention is given to matters such as the type of building most suitable for a manuscript library, what are the building materials to be preferred, what are the materials to be avoided, the required height and width of the halls and rooms of the library, the types of furniture recommended for the library etc. A model plan for a manuscript library building suitable for Indian climatic conditions is to be chalked out with the combined efforts of Conservationists, Manuscriptologists and Architects. If such a model plan is put forward by a team effort, suggestions for further improvements will be obtained and a perfect model, with provision for suitable alterations so as to fit in with the regional soil and climatic conditions, can be evolved. A few thoughts on the subject are listed below for the consideration of experts in the fields.

Location

The location for a manuscript library is to be selected with utmost care. The place should not be a waterlogged area inorder to prevent, to the extent possible, wetness to the floor or high degree of moisture in the atmosphere. Similarly the location of the building should be in a clean area i.e. it should be away from places like slums, storage of garbages, wastes, dirty ponds, waste-water channels etc. Such locations are breeding centres of various types of insects and rodents. Similarly it is not advisable to have the library in the heart of the city where the air pollution is relatively high and will adversely affect the longevity of manuscripts. The site of the building should be on a high terrain especially in regions where threat of flood exists. Also the site should be such that rain water will not be stagnated there i.e. the rain water should be easily drained.

Building

In the construction of the building, following points need to be taken care of:

(1) It is better to have relatively more height for the building so as to provide ample air space for the library. Such air space is helpful in reducing the intensity of heat radiation.

(2) Area inside the basement is to be filled with sea sand or any sand similar to that so as to reduce the chances of the floor to get wet.

(3) For foundation, the soil may be removed a little more in depth, and sea sand or gravel may be spread inside to form a thick layer of it. The concreting of the foundation is also essential.

(4) Anti-termite treatment should be done at all the necessary stages of the building construction.

(5) It may be better to have the foundation, basement and walls of the building out of granites.

(6) The floor may be built with marbles, floor tiles or polished granites.

(7) The library should be fully air-conditioned.

(8) The building should have proper fire protection arrangement. In addition to the fire extinguishers, fire alarm system should also be installed. Lightning arrester should also

be fixed to the building. So also automatic power cut off system is also a must for any manuscript library.

(9) The rooms and halls of a manuscript library should be sufficiently large so that more interspace can be provided between the almirahs, shelves or racks in which manuscripts are kept. If there is not much interspace proper cleaning of the racks, shelves and floor is not possible. Having wide interspace between almirahs and racks will reduce the formation of spider nets. Even if they are formed, having more interspace makes it more easy for their removal.

(10) Even if the roofing is with tile or concrete, ceiling is highly essential.

(11) Construction of the roof should be done in such a way as to drain away the water. Extra care is required to prevent any leakage. Even with all these, constant check is required to ensure that there are no cracks or damages to the walls or to the roof.

(12) The stack rooms of manuscripts require good air circulation so as to get rid of stale air. It may be better to have exhaust fans fitted to the ventilators if the stack rooms are not air conditioned.

(13) The stack room should be designed in such a way as to avoid direct access to sunlight. In A.C rooms the windows are to be provided with glasses capable enough to cut off ultraviolet radiation.

(14) Separate room or hall needs to be provided for exhibiting rare manuscripts. They can be exhibited in show-cases so as to prevent constant handling. So also separate

room is to be provided for those who want to refer to the manuscripts. Adjacent to it, atleast one room is required for the supervisory staff of the library, since those who come for the reference of the manuscripts require their help and may also need their supervision. In this staff room, facilities are required for keeping the indices and catalogues of the library and the magnifying lenses. A separate room is required for dusting, cleaning, oiling and such other conservation techniques required for the manuscripts. Similarly, a separate airy room not far away from the manuscripts stack room is required for installing fumigation chambers. Computer room, staff rooms, office room, seminar halls, store room for oil and chemicals etc. are essential requirements for any manuscript library building. A separate hall is required for stocking printed books and journals.

(15) Major manuscript libraries are engaged in the publication of manuscripts. Journals are also brought out. Hence it is ideal to have a separate publication division and sales wing adjacent to the main building.

(16) Some of the manuscript libraries have their own press and if so a separate building is required to house it.

(17) Even if publication, sales and printing are not planned at the time of building construction, the plan of the library should be as a self contained building complex with all basic facilities and also having scope for future expansion.

(18) Special care is required in the selection and arrangement of furniture in a manuscript library. Wooden furniture out of teak wood is preferred since it has better resistance to termites and insects which cause damage to

wood. The wood selected should be of sufficiently old trees and that too from the interior part consisting of the core and its adjacent portions. Thick and strong teak wood furniture not only resist the attack of termites and other insects, but also do not easily crumble or wither for a very long period of time. If the pieces of furniture in a manuscript library are out of poor quality wood, then that itself can be a major cause for attracting termites and insects and thus can become a major threat to the safety of the manuscripts. The racks and almirahs are to be so designed that retrieving a manuscript will not disturb the other manuscripts. Since codices should not be placed one above the other, the almirahs and racks are to be specially designed so as to have sufficient number of inside partitions. The bottom of the almirahs and racks should not make direct contact with the floor. Hence they are to be fitted with stands/legs so as to have an interspace of about 15 cms between the bottom of the almirah or rack and the floor.

(19) The surroundings of a manuscript library is as important as that of the building and its interior. Big trees and wild growth should be cleared off from the premises of the library building. The leaves of trees and grasses if decayed will be infested with worms and insects. Similarly dry leaves and grasses are easily susceptible to fire. Considering the above facts the premises should always be kept very neat.

Chapter X

CONSERVATION OF MANUSCRIPTS

There is not much variation in the lexical meanings of the terms 'conservation' and 'preservation' and can be considered as synonyms. But in Manuscriptology the term 'conservation' is used by many traditionalists to indicate the rectification of manuscripts so as to restore them, to the extent possible, to their original condition i.e., with 'restoration'. If suitable methods are not adopted for conservation, the damaged manuscripts will be fully lost within a very short period. 'Preservation' is a term used for protecting the manuscripts from getting damages in the case of undamaged manuscripts or to protect them from causing further damages to those manuscripts which are already damaged. But now the most predominant view is that conservation includes both preservation and restoration and accordingly preservation is only a part of conservation. In the modern age of advanced technology, it is possible that the contents of ancient documents can be preserved through methods such as transferring the whole text to a computer disc or by micro-filming. It is also an admitted fact that whatever may be the care one takes for the preservation and restoration of manuscripts, they cannot be protected for ever. It is possible only to keep them for a much longer period. Hence it is highly essential that by using modern techniques the text, the most important component in an ancient document, is to be safely protected and should not be allowed to be lost permanently. It should be remembered that the materials of the document, such as birch-bark, paper, palm-leaf etc., writing instruments such as stylus, quill, twig etc. and substances used in writing such as ink, extractions of leaves, carbon etc. have both historical and cultural significance and play an important role in determining the antiquity of the document. Even otherwise they are monuments of the cultural heritage and are to be protected as such.

Before going into the techniques of conservation it is essential to know the reasons causing damages to ancient documents. * They are mainly of four types :

(1) Due to climatic conditions.

(2) Due to biological factors.

(3) Due to man-made problems.

(4) Due to pollutants.

(1) Climatic Conditions

Hotness, humidity and rain do adversely affect the longevity of manuscripts. Hence manuscripts are to be protected from sunlight, rain and moisture. Exposure of manuscripts to intense sunlight or soaking in water or keeping the manuscripts in humid conditions are to be strictly avoided. Complete or partial damage to manuscripts may

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* The term conservation is used in this work to include both preservation and restoration.

occur due to causes like flood, wind and fire. Excessive heat and humidity accelerate the process of damage of the materials on the surfaces of which the texts are scribed. The ideal temperature and humidity for palm-leaf manuscripts are 20-22°C and 45-55% respectively.

(2) Biological Factors

Different types of worms and insects eat away both palm-leaf and paper manuscripts. Book-worms and insects like termites (wood termites and soil termites), cockroach, silver-fish, cricket, book-lice etc., spoil the manuscripts in various ways. They excrete and germinate on them. They nibble the materials of the manuscripts, cause wetness and decolouring. Some of the fungi produce a type of acid which makes the paper yellowish or black. They also create wetness on the surface of the manuscript. In India, rodents especially rats are a major threat to both paper and palm-leaf manuscripts. It is said that neem leaves, snake skin, and feathers of peacock can be used for protecting the manuscripts from rats and insects.

(3) Man-made Problems

The damages caused due to improper storing and careless handling are purely of man-made in nature. The manuscripts are not to be dumped as a pile. Suitable storing places are to be selected. Each codex, to the extent needed, is to be tightly tied. It may be noted that more loosening or more tightening (pressing) is injurious to manuscript materials. In the storing place the codices are to be properly arranged so as to cause no damage to any one of them . Care is also required while taking out the manuscripts from the shelves or boxes. When referring to the manuscripts each folio is to be carefully skipped over so as to avoid causing crinkles, tearing or folding for the folios. In the case of paper manuscripts more attention is required to avoid any folding of the edges of the paper. Very often people who handle the manuscripts do not give much attention to the above factors and hence damages are caused. Damages of this sort are entirely man-made. The care of manuscripts is very important and in the context of preservation of manuscripts many people use the term 'care and preservation of manuscripts'.

(4) Pollutants

There exist a number of pollutants which cause deterioration to manuscripts. Various types of dust particles are present in the atmosphere and some of them cause damage to manuscript materials. Dust particles of minerals, cement and many of the chemicals belong to this category. Dust particles of geological origin, though not much harmful by themselves, stimulate the actions of gaseous pollutants and water vapours which have a direct role in causing gradual ruining of manuscripts. Also, deposits of dust make the written letters on the manuscripts unclear to be read. The various gases present in an unpolluted atmosphere keep a natural balance so as to make it congenial to both living beings and non-living objects. In an atmosphere polluted by industries, filthy conditions etc. cause imbalance in the nature's ordained proportion of atmospheric gases. Such conditions cause the presence of larger quantum of harmful gases to the longevity of manuscripts. Gases like ammonia, sulphur dioxide, oxides of nitrogen are harmful for manuscript materials especially to palm-leaves. Oxygen, an essential gas for living-beings, plays a prominent role in damaging the cellulose materials and hence an excess presence of oxygen causes damage to the organic elements present in palm-leaves.

The life of palm-leaf manuscripts is considered to be around 500 years in Southern India but it is much more in Northern India. If preserved properly the period of their life can be extended further. * If proper care is not taken the palm-leaves may be damaged or ruined within a very short span of time. Life of paper manuscript is considered to be relatively less than palm-leaves, though there exist paper manuscripts more than 1000 years old. ** Manuscripts, the materials of which are leather or birch-bark (bhūrjapatra) are more durable than palm-leaves or paper. In India there existed effective traditional methods for preserving manuscripts. Since the climatic conditions show regional variations, the traditional methods for preservation also exhibit corresponding variations and the methods adopted in one region may not be identical with those adopted in another region. Though these methods are now almost neglected, such methods are best suited since they are evolved according to the weather conditions of the concerned regions. Also, the materials used for preservation are easily available locally. The methods utilized for the preservation of manuscripts can be classified into two types. They are (1) Traditional methods and (2) Modern methods.

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* the Oriental Research Institute and Manuscripts Library, Thiruvananthapuram there are palm-leaf manuscripts more than 600 years old. Eg:
(1) Muhūrttapadavī-Varadīpikā, M.E.451/A.D.1276 (Ms.No. 397).
(2) Attiyar̲amaṭham granthavari, M.E. 551/A.D.1376 (Ms. No. 15880-A)

** A few such paper manuscripts are found in the stock of ORI & Mss. Library, Thiruvananthapuram. Eg: (1) Bṛhatjjātakavivaraṇam, Śaka 888 / A.D. 967 (Ms. No. 7715) (2) Alaṅkārasūtrasandarbha, Sam 1056 /A.D.999 (Ms. No. 9420).

1. Traditional Methods

Though there exist some regional variations, the basic principles adopted all over India for the preservation of manuscripts are almost same. The materials used in different regions for the preservation, to a great extent, show similarities. It is said that for the protection of manuscripts, separate protecting covers are made out of embossed metal in Nepal. Similarly Bühler states that in Jaina Libraries palm-leaf manuscripts are safely placed in small boxes of white metal and then they are kept in sacks made out of white cotton cloth. It is reported that in Kashmir, manuscripts are bound in leather for protecting them from dust and insects. Manuscripts are to be protected not only from worms and insects but also from moisture.* Care is also required to protect them from torrential rain and flood. The traditional way of keeping manuscripts is in wooden or cane boxes and in wooden almirahs. The folios of the manuscripts are bound tightly before keeping them in the box so as to protect them from easy access to insects and worms. The codices are tied properly with upper and bottom wooden plates (pieces of wooden plank). These wooden plates are in the size of the manuscripts. These protecting wooden plates are generally made out of teak-wood, jack-wood or neem-wood. In some rare instances they are made out of ivory. Such manuscript bundles are found in palaces and very often the outer ivory coverings are beautifully decorated with carvings of pictures which bear relevance to the content of the manuscript. The wooden boxes in which the manuscripts are to be kept are generally out of teak-wood since teak-wood is not easily susceptible to termites and is more durable. These boxes have four stands so that the bottom of the box does not touch the floor. Around the stands turmeric powder is sprinkled. In certain cases each manuscript is kept in separate boxes specially designed for the same. It is also seen that the manuscripts are protected from dust by covering it with a silk cloth and kept in boxes. In some places each manuscript bundle is wrapped up in coloured cloth usually red or blue. These coloured cloths having flaps which can be tied together are made according to the size of the manuscripts. The red or blue coloured cloths are used since they are supposed to be not attractive to insects. The dried neem leaves are spread inside at the bottom of the boxes in which manuscripts are kept. Also black pepper and camphor are strewed inside the box. The black pepper is considered to be an efficient material for absorbing moisture and camphor is useful for protecting the manuscripts from fungi and insects. Though not very common, instead of black pepper, black cumin is found to be used. Similarly dry tobacco leaves are also used by some. Black cumin and dry tobacco leaves are not allowed to have direct contact with the manuscripts and hence they are placed in small cloth bags called'kili' in Malayalam and then only they are placed inside the box. In some cases, with regard to the manuscripts in the private custody it is noticed that the boxes containing manuscripts are kept in 'Thaṭṭinpuṟam', *usually near to the kitchen portion.

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* Discussion on the traditional methods of preservation given here is mainly based on the practices followed in the Kerala region.

The palm-leaf manuscripts are taken out from the boxes occasionally. The boxes will be cleaned and placed in sunlight for a few hours. After removing the dust particles by rubbing the leaves with a piece of nice cloth or by brushing, each folio is oiled with lemon-grass oil. The oiled folio is suspended in the air in shade so as to avoid direct exposure to sunlight for about a day. Then they will be placed again in the box. If required, fresh threads are used replacing the old ones.

For oiling the palm-leaves lemon-grass oil was used till some years back. Due to its exorbitant price, instead of lemon- grass oil, a mixture with citranol oil is now made use of. Citranol oil is mixed with neem oil, turpentine, camphor and black-oxide in a specific proportion. The proportion of mixing is as follows : citranol oil 500 gms+ neem oil 250 gms + camphor powder 250 gms + turpentine 1 ltr + black oxide 50 gms. Some variation is made in the quantity of black-oxide according to the colour of the manuscripts. i.e if the leaves are more black the quantity of black oxide will be less. In some libraries the manuscripts are kept in open racks. ** Camphor powder is sprayed on the racks during intermittent periods. Occasionally naphthalene balls are also placed on the racks. For dusting and oiling special types of brushes are used. A vacuum cleaner can be used to clean the racks.

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* In traditional Kerala houses the ceiling of the rooms are made with thick wooden planks. This type of ceiling is known in Malayalam as 'maccu' or 'taṭṭu'. The interspace between the roof and the ceiling is very spacious and this interspace is known as 'taṭṭinpuṟam'.

** In ORI &Mss. Library , Thiruvananthapuram the manuscripts are kept in open racks.

the racks. For dusting and oiling special types of brushes are used. A vacuum cleaner can be used to clean the racks.

2. Modern Methods

Both in the traditional methods and also in modern methods the importance of the care of manuscripts is well recognised. The techniques adopted for it are also almost same. Continuous care of manuscripts to a large extent protects manuscripts from causes of damage. Those manuscripts for which restoration techniques are applied, through proper care and maintenance, the recurrence of the cured damages can be stalled off. For the continuous care of manuscripts attention is to be given to the following:

1. The temperature and humidity within the stack room, to the extent possible, are to be kept ideal to manuscript materials and all possible efforts are to be made to avoid causes of major fluctuations to humidity and temperature.
2. Stack room requires sufficient ventilation.
3. Exposure of manuscripts and stack room to direct sunlight is to be avoided.
4. Attention needs to be given for regular cleaning of the stack room.
5. Dusting and oiling of manuscripts are to be done during regular intervals.
6. Insecticides not injurious to manuscripts may be used according to requirement.
7. Careless handling of manuscripts is to be avoided.

8. Every manuscript bundle is to be checked intermittently and problems if any should be rectified. Worn-out or broken threads of the manuscript codices need to be replaced.

These are only some of the methods to be adopted for the preservation of manuscripts and are found to be used in ancient and modern periods. The chief techniques used in modern times for preservation and restoration are discussed below.

Chief Modern Techniques of Preservation

The chief techniques used in modern times for preservation of manuscripts are the following :

a. Air-conditioning
b. Deep-Freezing
c. Fumigation
d. Moisture Absorbents
e. Xeroxing
f. Microfilming
g. Digital archiving

a. Air-conditioning

Maintaining constant temperature prolong the period of longevity of manuscripts. In India where extreme climatic conditions exist air-conditioning of the library is highly essential. To a great extent it helps to reduce the problem of dust. The air-conditioned rooms are not congenial for the survival of many of the worms and insects. However, attention is required to have the air-conditioning throughout the day. In the Indian conditions, if required, special arrangements may be made to ensure uninterrupted power supply and to maintain constant voltage. Switching off the air-conditioner for hours together will adversely affect the manuscripts.

b. Deep-Freezing

When the temperature is at freezing point or below, the insects and worms cannot survive. Hence documents which are to be preserved can be kept at freezing point. Since insecticides are not used in this method it is non-toxic. For deep-freezing a specially designed Deep-freezer is used. The books or manuscripts are placed inside polythene bags and are tightly sealed. These loaded bags are placed on a trolley fitted inside the freezer. After closing the lid, the deep-freezer is switched on. The loaded bags are kept inside the chamber for about three days. Then the bags are taken out from the freezer and keep them in the open air for a few hours to remove the dews if any on the outer surface of the polythene bags. Then the manuscripts are taken out of the bags and are placed in their original storing place.

c. Fumigation

Fumigating the manuscripts is helpful in eradicating worms and insects. For this purpose, special fumigation chambers are used. Chemicals like Themol, Ethoxide, Aluminium Phosphide are used as fumigants.The fumigants are heated with the help of electric bulbs fitted inside the chamber. The fumigants, when heated, produce fumes. The manuscripts are kept in such chambers and allowed to undergo fumigation for some time. After the treatment is completed, the doors of the chamber are opened and the gas is driven out from inside with the help of exhaust fans. The chamber is kept opened for some time so as to get fresh air in. Then the treated manuscripts can be taken out and kept in their original place.

d. Moisture Absorbents

To protect the manuscripts from getting wet due to moisture, different types of moisture absorbents are found to be used. The chief among them are silica gel, anhydrous calcium chloride and charcoal. Among all the moisture absorbents, silica gel is the most efficient and is considered to be very safe. For reducing the humidity in non-air-conditioned manuscript libraries, the use of moisture absorbents is very suitable. Such absorbents can be placed in different parts of the room.

e. Xeroxing

Whatever may be the care one takes, it may not be possible for one to preserve the manuscripts for ever. Hence preservation of the contents becomes essential. Xeroxing is used for preserving the contents of manuscripts. Having xerox copies is also a preservation technique in the sense that for references and studies these xeroxed copies can be utilised and thus the original manuscripts are kept untouched. This helps in the safe protection of the original manuscripts.

f. Microfilming

With the help of a microfilm camera, manuscripts can be microfilmed and when needed they can be read through a microfilm reader. By using microfilms frequent handling of the original manuscripts can be avoided. However, it may be noted that in the case of both xeroxing and microfilming the heat emitted is injurious to the manuscript material.

g. Digital Archiving

The written lines of the manuscripts as such can be transferred to CD ROMS and whenever necessary they can be read either from the computer screen or from their print out. For this purpose computers with scanning facility are used. Both palm-leaf and paper manuscripts can be directly scanned with the help of a scanner.

Techniques of Restoration

In conservation of manuscripts due importance is given to restoration. The techniques used for restoring the damaged manuscripts to their original state, to the extent possible, are discussed below:

a. Separation of Sticking Manuscripts

Leaves of bundled manuscripts, if not occasionally untied and cleaned, in course of time, may stick together. In addition various types of external causes also create this problem. Dampness or excessive humidity are of this sort. Due to the above causes, it is found that the leaves of manuscripts stick together and cannot be easily separated without damage. In some such cases with the help of a spatula, separation is possible after moistening the palm-leaves. Another method is to keep the sticked leaves immersed in hot glycerin water for about an hour, each being taken out, with the help of a spatula. The palm-leaves are dried if kept in between the blotting paper sheets. When letters are written with ink it is not advisable to use the above said techniques.

b. Restoring Legibility of Writing

In manuscripts letters may become faded or non-legible. In palm-leaf manuscripts they can be revived without much difficulty. Extractions of certain leaves are quite commonly used for this purpose. But plants selected for this purpose vary according to the local availability. Smearing with lamp-black is common to all regions. A small quantum of lamp-black is taken on a cotton piece and gently rubbed on the letters. Excess quoting of lamp-black if any is removed by a soft cotton cloth, and then the leaves are cleaned with a mixture of alcohol and glycerin.

c. Restoration of non-stiff quality of leaves

Fresh palm-leaves are flexible to a certain extent. As time elapses, this flexible quality may be lost and the palm-leaves may become stiff and thus become prone to brittleness. Softening of leaves is done either by immersing them in glycerin or by brushing them with glycerin.

d. Filling holes and broken edges

Due to the attack of insects holes are formed both in palm leaves and paper. Bigger holes are filled with pieces of unused palm-leaf or paper as the case may be. The piece is cut out equal in shape and size to the hole in the manuscript and this piece is stuck to the original leaf at which the hole is found. For making to stick, polyvinyl acetate adhesive is used. The same method is adopted for the rectification of the

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broken edges. In the case of small holes, fibres of mulberry tissue paper is made use of. The fibres of mulberry tissue paper is placed on a glass sheet by making use of the pointed edge of a needle or knife. Then the fibres are mixed with methyl cellulose adhesive. The holes in the manuscript are filled in with this mixture and made flat and smooth with the help of a spatula.

e. Removing brittleness and fragility conditions

Old manuscripts very often become brittle and fragile. When handled such manuscripts will be crumbled to pieces. In such cases an additional supporting tissue is used so as to enable one to use the manuscript without causing damage to it. The tissue used is either fine chiffon or acid-free tissue paper. The adhesive used for sticking the tissue to the manuscript leaves can be starch paste or carboxy methyl cellulose or cellulose acetate sheet.

f. Lamination

Deterioration in the strength of the manuscript materials can be noticed in old manuscripts which also become very fragile. Lamination is used as a technique of restoration in such cases. In paper manuscripts reinforcement to paper is done through lamination. It is done either manually or by machine. Different types of lamination are done manually. In machines there exist two types :

(1) Flat-bed laminator and (2) Rotary laminator. Though lamination is generally used as a technique of restoration, it can also be used as a preservation technique in the case of undamaged paper manuscripts. Also lamination gives

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protection from easy deterioration. If laminated many of the torn leaves or pages can be conserved. In addition, through lamination the scribbled matter becomes more legible.

g. Removal of Stains

There are instances in which manuscripts may be got stained. It can happen to both paper and palm-leaf manuscripts. In the case of paper manuscripts dry-cleaning is used as one of the methods for stain removal. Solvents can also be used for this purpose. There exist different types of solvents. The solvents which are not harmful to the manuscript materials such as palm-leaf and paper and also to the ink-written letters are to be selected. The solvent can be applied on the affected part with the help of a brush.

h. Cello tapes and Tissue papers

The torn folios of palm-leaf manuscripts can to a certain extent be set right by using cello tapes and tissue papers. They are used quite extensively for paper manuscripts.

For any manuscript library the most essential task is the conservation and preservation of manuscripts. If proper attention is not given, the condition of many of the manuscripts in the stock may become worse and will become unfit for use by researchers. Also it is difficult to utilise such manuscripts for the purposes of critical edition. They are also monuments of cultural heritage. Hence extra care is required for the conservation of manuscripts.

Chapter XI

YEAR RECKONING

From a very early period, the Indians knew the technique of determining time and distance quite precisely. But the continuous reckoning of years as in an era is said to be a later development. It does not mean that the ancient Indians had no idea about month, year etc. In fact the Indians might be the earliest people who used the temporal units like year, month and day. Since they were pioneers in Astronomy, their calculations were based on stars and planets. In addition to year, month and day, units like nāḍī (corresponding Malayalam word is n̲āl̲ika), tithi, pakṣa and ayana were also recognized by them. But it is said that the concept of week was unknown to them and its first reckoning noticed was at the end of 5th century A.D. * The concept of 'yuga' found in ancient Purāṇās based on the anticipated life of earth is also a kind of temporal division calculated in terms of years. The number of years in each yuga is:

aṣṭāviṃśati sahasrānvita saptadaśalakṣābde kṛtayuge
ṣaṇṇavati sahasrānvita dvādaśalakṣābde tretāyuge
catuḥṣaṣṭhi sahasrānvita aṣṭalakṣābde dvāparayuge
dvātriṃśatsahasrānvitacaturllakṣābde vartamāne Kaliyuge **

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* 'Indian Epigraphy', D.C. Sircar, 1964, p. 226.

** Adbhutaśānti- Ms. No. 22996 -B. ORI & Mss. Library, Thiruvananthapuram

It means Kṛtayuga consists of 17 lakhs 28 thousand years, Tretāyuga has 12 lakhs 96 thousand years, Dvāparayuga has 8 lakhs 64 thousand years and Kaliyuga has 4 lakhs 32 thousand years. But the concept of yuga differs from the era system. Unlike in yuga, there exists continuous reckoning of years in an era from its commencement and thus in an era subsequent periods are referred to in terms of the number of years elapsed from the beginning of the era. But such a system was unknown to the Indians prior to the introduction of era system in India by the Scytho-Parthians. In this connection it may be noted that there is no evidence to show that the Indians followed any type of era system prior to 2nd century B.C. In addition, the most ancient records in which an year is mentioned are obtained from the North-Western region which was under foreign rule (Scytho-Parthians) from 6th century B.C to 4th century B.C. The above facts suggest that the era system is not of Indian origin.

Specifying Year in Ancient Records

Though the Indians had complete mastery over the calculation of time, surprisingly the recording of years was not found in most of the ancient inscriptions and manuscripts. In a few such records year is given, but the pattern is different from the mentioning of year in relation to an era. They are generally based on some historical events such as the royal crowning. Very often, for specificity along with the event the factors such as season (ṛtu) and astronomical characteristics such as positions of sun, moon, stars etc. can be seen. Even after the introduction of era, for a very long period the pattern of recording an year was not popular, and, even in instances where an year was recorded, the preference was not referring to the year in terms of an era but specifying it in terms of royal crowning. This pattern continued for a very long period i.e. the year is mentioned as seventh year after the crowning of a particular king, twentieth year after the crowning etc.

Eg. "dvādasa (dvādaśa) vasābhisitena devānāmpiyena rājña (rājñā) idam lekhāpitam" *

As already pointed out, even after the introduction of eras, for a very long period the general pattern of writing was without specifying the year. The system of marking the year got currency only in a gradual manner. The marking of the year was done in different ways. The most commonly adopted pattern was by using words or letters of alphabet. The use of numbers for this purpose was not very common. A lot of records belonging to the medieval period can be found in which words are used for denoting numbers. This was the pattern adopted by great Ācāryas like Varāhamihira and Piṅgala. A few examples of words representing numbers found in ancient records are given below.

0 = śūnya, pūrṇa, bindu

1 = ādi, śaśāṅka, dharaṇī

2 = Yama, yugma. dvaya, netra

3 = Rāma, triguṇa, agni

4 = Veda, Yuga,puruṣārtha

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* Girnar Inscription of Aśoka

5 = bāṇa, bhūta, Pāṇḍava

6 = aṅga, kāvya, ṛtu

7 = giri, chandas, sāgara

8 = nāga, diggaja, maṅgala

9 = nidhi, pavana, ratna

10 = paṅkti, avatāra, Rāvaṇaśiras

In addition to the words given above, there existed such other words also to represent each and every number. Bigger numbers are indicated by the combination of such words. The number is read by reading from right to left and this fact is pointed out by the statement " aṅkānām vāmato gatiḥ" given in Bṛhatsaṃhita, the famous work of Varāhamihira.

There exist different systems for representing numbers with the help of letters. In such systems, barring a very few, the date is obtained by reading the letters from right to left. One of the most important systems of this type is the one given in Āryabhaṭīyam (499 A.D), the famous treatise on Astronomy. In this system the values of letters are as follows:

ka - 1	kha - 2	ga - 3	gha - 4	ṅa- 5
ca - 6	cha - 7	ja - 8	jha- 9	ña -10
ṭa - 11	ṭha- 12	ḍa -13	ḍha- 14	ṇa- 15
ta -16	tha- 17	da- 18	dha- 19	na-20
pa -21	pha -22	ba -23	bha -24	ma- 25

The 8 letters from 'ya' to 'ha' represent numbers such as 30, 40 etc. i.e. ya = 30, ra = 40, la = 50, va = 60, śa = 70, ṣa = 80, sa = 90, ha = 100.

The numbers such as 26 to 29, 31 to 39, 41 to 49, 51 to 59 etc. which come in between the multiples of 10 are represented by sequences of two letters.

Eg:- cakha = 26 (ca = 6, kha = 2)

gaja = 83 (ga = 3, ja = 8)

The multiples of 100, 1000, 10000 etc. are derived with the help of vowel letters combining with the consonants. In this system the vowel 'a' does not have any value whereas vowels (short or long) i, u, ṛ, ḷ and diphthongs e, ai, o and au have values. The values obtained by adding these vowels to consonants are in squares of 10 i.e.10^2, 10^4 etc. For example, if vowel 'i'is added to a consonant it is to be read with two zeros, if u is added, it isto be read with four zeros and if 'ṛ' is added it is to be read with six zeros etc.

Eg. gi = 300, gu = 30000, cṛ = 6000000. A similar system was prevalent in South India commonly referred to as

'Kaṭapayādi'. It was also known as 'Paralppēru'. The values of letters in Kaṭapayādi are as follows:

ka	ṭa	pa	ya	=1
kha	ṭha	pha	ra	=2
ga	ḍa	ba	la	=3
gha	ḍha	bha	va	=4
ṅa	ṇa	ma	śa	=5
ca	ta		ṣa	=6
cha	tha		sa	=7
ja	da		ha	=8
jha	dha		ḷa	=9
ña	na			=0

Only the consonants represent the numbers and the vowels and anusvāra do not have any value in this system. In a consonant cluster the value is indicated by the final consonant. The values of letters in Kaṭapayādi are explained in Sadratnamālā, a work on Jyotiṣa *

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* Sadratnamālā savyākhyā Ms.No. 22177 ORI & Mss.Library, Thiruvananthapuram.

"nañāvacaścaśūnyāni saṃkhyāḥ kaṭapayādayaḥ
miśrerūpāntyahatsaṃkhyā na ca cintyohalasvaraḥ"

In the Kaṇḍiyūr inscription of Kothavarman the year is indicated as "viṣamam puṇyamekam".

vi	ṣa	maṃ	pu	ṇya	me	kaṃ
4	6	5	1	1	5	1

By reading from right to left the year indicated can be read as 1511564 (Kaliyuga)

In the Malabar Vaṭṭeḻuttu copper plate inscription, the year is pointed out by "prabhuḥ pūjyaḥ śaśāṅkaḥ"

pra	bhuḥ	pū	Jyaḥ	śa	śā	ṅkaḥ
2	4	1	1	5	5	1

The year shown is 1551142 (Kaliyuga). The earliest use of Kaṭapayādi system is found in Laghubhāskarīyam (A.D 522) an important astronomical work written by Bhāskarācārya I.

'Akṣarapalli' is another system which was predominantly found in Jaina manuscripts. There is evidence of its use upto 16th century. Here the vowels, consonants, consonant-vowel combinations and consonant-consonant combinations are capable enough to indicate numbers.

Eg. 1 = e, sva, rum

3 = tri, srī, maḥ

50 = s, i, ṇu

200 = sū, ā, lū, rghū

'Aṅkapalli' is closely related to Akṣarapalli. Here the letters are used to represent the numbers in the notational system(daśāṃśa rīti).'Nannanyādi' *,the most popular system in Kerala for giving folio numbers in manuscripts is occasionally used to represent an year. In addition to the above systems, there exist some other systems also in which numbers are represented by letters.

The Eras

From second century B.C onwards a good number of eras originated in India. Some of them are known in different names. For instance Kollam era is also known as Malayalam era; Śaka era is also referred to as Śātavāhana or Śālivāhana era. Many of the eras became extinct after their existence for different periods of time. Most of them had only limited spread. In some cases there exist minor variations with regard to the month and year of the commencement of the era in accordance with the differences in regions. In Adbhutaśānti (Ms. No. 22996-B) the names Yudhiṣṭhira, Vikramārka, Śālivāhana, Vijaya, Nāgārjuna and Kali are enlisted as eras.

Kalivarṣa

This era does not have any connection with the fourth yuga (Kaliyuga) mentioned in Purāṇas. There exists a view that Kalivarṣa was started in 3101-3102 B.C. as per its present reckoning of the commencement of this era. According to

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* For details see Chapter III, p.24.

some, it is related to the supposed date of birth of the king Parīkṣit and thus the origin of this era for them is just after the Kurukṣetra war. However most of the historians consider it as a later innovation of the Indian Astronomers and for them its origin may be around 4th century A.D., though a prior date (3101-3102 B.C.) is given as its beginning . In some of the ancient inscriptions and manuscripts of Kerala the year is recorded in Kali. Eg. Thiruvananthapuram inscription of Veera Ravi Varma (end of Kali 4704) and the Kaviyūr inscription (Kali 4052). In the following five manuscripts of ORI & Mss. library, Thiruvananthapuram the year is marked in Kalivarṣa.

Paramānandatantram Ms.No.1544,
Kali 4129 (A.D. 1028)

Tantrasaṃgraham Ms.No. 835, Kali 4607 (A.D. 1506)

Kāvyakalānidhi Ms.No. 8321, Kali 4957 (A.D. 1856)

Devīśatakam Ms.No.2401, Kali 4984 (A.D. 1883)

Bhūkailāsamāhātmyam Ms.No. 12230-A, Kali 5006 (A.D. 1905)

The equivalent year in Christian era can be obtained by deducting 3101/3102 from Kali year. Thus 2002 A.D is 5103/5104 in Kalivarṣa.

Vikramasaṃvatsara

This era was started by the foreign rulers Scytho-Parthians who reigned the western parts of India for a very long period. In the early periods of its existence it bears no specific name. Subsequently it is known as Kṛtavarṣa. *

The Nand inscription of Śaktigaṇaguru, Udaipur (Kṛtavarṣa 252) and the Bandwa inscription of Maukharis, Kota (Kṛtavarṣa 295) stand testimony to it. Since this era was more popular among the Malavas and in the regions under them, it was also referred to as Malava era. Eg. In the Vijayagar inscription of Bharatpur the date is given as Malava 461. Similar is the case of Mansor inscriptions (Malava 493 and 524). It is referred to as Vikrama era, only during 8th century. The Dhiniki inscription (Kathiavar) of A.D. 794 gives the name of the era as Vikrama Saṃvatsara. Subsequently in many of the inscriptions in this era, the abbreviated forms Saṃvat or Sam are seen.

Eg. Saṃvat 1166, Pauṣavadya 15, ravau (Govinda candra inscription); Saṃvat 11, Vaiśākhadine 16 (Naihatti inscription of Ballalasena). In the manuscripts of ORI & Mss. Library, Thiruvananthapuram this era is marked either as Saṃvat or Sam. It is believed that the original home of the Malavas was the North-West Province of undivided India and thus they had the acquaintance with Kṛtavarṣa introduced by the Scytho-Parthians. Subsequently they were displaced from their original home and had to settle in Rajasthan and the Kṛtavarṣa used by them was began to be known as Malava era. By about 4th century A.D., the Malava region was annexed by Chandragupta II (376-414 A.D) and thus it became a part of the Gupta Kingdom. It is believed that the popular hero Vikramāditya is Chandragupta II. By about 8th

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* The name Kṛta is not related to Kṛtayuga.

century A.D, this era was connected to Vikramāditya and thus got the name Vikrama Saṃvatsara. The popular belief is that this era was started by Vikramāditya. In the Bodhgaya inscription (Bihar) it is seen "Vikramādityotpāditasaṃvatsara 1005". Anyway by about 8th century A.D onwards this era was referred to as Vikrama Saṃvatsara. During this period it began to spread to Madhya Pradesh and Gujarat. Both Vikrama Saṃvat and Śakavarṣa were used by the Ujjaini School of Astronomers. The beginning of Vikramasaṃvat is 57/58 years earlier to that of Christian era. i.e. 2002 A.D is 2059/2060 in Vikramasaṃvat. Among the Sanskrit manuscripts of ORI & Mss. Library, in 439 the year is recorded in Vikrasaṃvatsara. In addition in 133 manuscripts year is recorded in both Vikramasaṃvatsara and Śaka. A few ancient manuscripts of this library in which year is marked in Vikramasaṃvatsara are given below:

Alaṅkārasūtrasandarbha (Ms.No. 9420)	Sam 1056 (A.D. 999).
Kapardikāpraśna (Ms. No. 1674)	Sam 1082 (A.D. 1025)
Dravyaguṇaśataśloki (Ms. No. 9658)	Sam 1236 (A.D. 1179)
Mukundavijaya (Ms. No. 5406)	Sam 1324 (A.D. 1267)

Śakavarṣa and Kaniṣkavarṣa

It is opined that the Śakas and Kuṣāṇās, the two foreign rulers of India, were responsible for the introduction of Śaka and Kaniṣka eras respectively. In Uttarpradesh and Bihar, Kaniṣka era was more popular but subsequently it was replaced by Śakavarṣa. Thus Kaniṣkavarṣa was also began to be considered Śakavarṣa. During its later development, Śakavarṣa became very popular in the Karnataka region and hence some people relate it with Śātavāhanas (Śālivāhanas). There is a difference of 42 years between Śaka and Kaniṣka eras. i.e. Kaniṣka era is 42 years later to Śaka. Due to the replacement of Kaniṣka era by Śaka, in many of the inscriptions and written records Kaniṣka era is wrongly mentioned/interpreted as Śaka. Śakavarṣa is even now used in many parts of India, but with some regional variations. The unified Śakavarṣa is one of the two official eras of the Government of India, the other being the Christian era. The equivalent Christian era can be obtained from the fact that Śaka era is 78/79 years later to Christian era. i.e 2002 A.D is 1924/1923 Śaka. Among the Sanskrit manuscripts of ORI & Mss. library, Thiruvananthapuram, in addition to the 133 manuscripts in which both Vikrama Saṃvat and Śaka eras are given, there are 144 manuscripts in which Śaka year alone is given. A few ancient manuscripts kept in the stock of this library in which year is recorded in Śaka are given below:

Bṛhatjjādakavivaraṇa-Jagaccandrikā
Ms. No. 7715; Śaka 888 (A.D. 966)

Goḷadīpika - Ms. No. 762 E; Śaka 1417 (A.D. 1495)

Tārkikarakṣāvyākhyā - Ms. No. 10675;
Śaka 1417 (A.D.1495).

Kollam era

Kollam era is also known as Malayalam era. This era is used in the whole of Kerala region. Its spread was not limited to Kerala only but also extended to the adjacent regions of Tamilnadu such as Kanyakumari and Thirunelveli districts. After the independence of India, Malayalam era is gradually being replaced by Christian era. Now for official purposes Christian era alone is generally used. However, for religious and astrological purposes Malayalam era is widely practiced. Similarly the names of the days and months of Malayalam era are used by almost every Keralite. The name Kollavarṣam is closely related to the place Kollam. The ancient records of Kerala and its adjacent Tamilnadu regions are mostly in Kollam era. Eg. Pārthivapuram inscription, M.E. 98; Kaṇḍiyūr inscription M.E. 392.

The year reckoning in Malayalam manuscripts are mostly in Kollam era. Also many of the Sanskrit manuscripts of Kerala bear the year in Kollam era. If 824/825 is added to Kollam era, one gets the equivalent Christian era. i.e 2002 A.D is 1177/1178 in Kollavarṣam.

Among the Sanskrit manuscripts of ORI & Mss. library, in 569 the year is marked in Kollam era and among the Malayalam manuscripts Kollavarṣam is indicated in 475. A few ancient manuscripts of this library in which the year is recorded in Kollam era are given below:

Sarvānukramaṇīvṛtti, Ms. No. L. 702 C,
Kollam 358 (A.D 1183)
Muhūrttapadavī, Ms. No. L. 397 C,
Kollam 451 (A.D 1276)
Attiyaramaṭham Granthavari, Ms. No. 15880,
Kollam 587 (A.D 1382)
Daivāgamam bhāṣā, Ms. No. 1703,
Kollam 696 (A.D 1521)

Kaṇṇaśśarāmāyaṇam, Ms. No.21391,
Kollam 698 (A.D 1523)

Many other eras were also in use in different regions of India. A few such eras are discussed briefly.

Putuvayppuvarṣam

Putuvayppuvarṣam was in vogue in Cochin and its neighbouring areas. It begins on 1341 A.D. It is believed that the creation of this era is related to the origin of Vaipin, an island very near to Cochin. There are only a few records in which this era is found recorded. In the Pāliyam Copper Plates (five in number) representing an agreement between the Dutch and the Cochin State, the year is recorded in Putuvayppu varṣam i.e. "mīnam 4 putuvayppuvarṣam 322" i.e. 22nd March 1663 A.D.

Guptavarṣa

It is also known as 'Valabhivarṣa'. The commencement of this era was on 319/320 A.D. Chandra Gupta I is believed to be the founder of this era. The name 'Valabhi' is obtained due to the patronage given to it by the kings of Valabhi. Though not extensive in spread, this era was in existence in Saurashtra, Deccan, Orissa and Madhya Pradesh.

Harṣavarṣa

The emperor Harṣavardhana of Puṣyabhūpati empire is considered as the founder of this era. There exist two opinions on the commencement of this era one as 599 A.D and the other as 606 A.D. This era was in vogue for about

300 years. Its spread was mainly in Nepal and in Northern India. When Vikrama Saṃvatsara got more popularity, Harṣavarṣa was gradually replaced by Vikrama Saṃvatsara. Alberuni mentions another era Śrīharṣavarṣa' supposed to be started in B.C 457. But no document is so far obtained in which the year is given in such an era.

Newarivarṣa

This era was started by the Nepal king Jayadeva Malla. In Nepal, though Śaka era is more popular, Newarivarṣa is even now in use though not quite widely. The equivalent Christian era is obtained by adding 878/879 to the Newari year.

Lakṣamaṇasenāvarṣa

This era is even now current in North Bihar in the regions of Mithilā and its neighboring places. It is also known as 'Lakṣmaṇa Saṃvat.' In some records it is indicated by the abbreviation 'la saṃ'. Its origin might be between A.D. 1108 and A.D.1119. The Gowda emperor Lakṣmaṇasena who ruled over Bengal and Bihar was the founder of this era.

Buddhanirvāṇavarṣa

This had wider currency among Buddhists. Its commencement is from the date of Buddhanirvāṇa. Date of this era is reckoned as how many years passed after Buddhanirvāṇa. Buddhanirvāṇa is considered differently in different countries and accordingly the commencement of Buddhanirvāṇavarṣa also shows corresponding variations. In India its beginning is 486 B.C., in Sri Lanka 544 B.C., in Japan 947 B.C., in Tibet 433 B.C. and in China 638 B.C. Though the

Buddhanirvāṇa date is given as its commencement, the actual origin of this era might be in a subsequent period.

Vīranirvāṇavarṣa

This era is based on the 'nirvāṇa' of Shri Vardhamana Mahavira. It is more common in Jaina works and to a limited extent it is found in Buddhist and Hindu works also. Similar to that of Buddhanirvāṇa, there is no unanimity regarding the year of the nirvāṇa of Shri Vardhamana and so the beginning of this era is considered differently. The majority view is that Vīranirvāṇa is in B.C. 527/528 and so the year of commencement of this era is also the same. Here too the actual origin of this era might be at a subsequent period of Vīranirvāṇa.

In addition to the above discussed eras, some other eras were also in existence in India. Nandavarṣa, Āyuktāyikavarṣa, Saptarṣivarṣa, Grahaparivṛttivarṣa, Śivājivarṣa, Kocavihāravarṣa, Siṃhavarṣa, Cālūkyavarṣa, Bhaumakāravarṣa are some such eras. In Adbhutaśānti (Ms. No. 22996 - B) eras like 'Yudhiṣṭhiravarṣa, 'Vijaya varṣa', 'Nāgārjunavarṣa' are also mentioned. But further details are not given.

As already pointed out, in India the year was recorded only in a very few documents. To illustrate this, the manuscripts in the stock of ORI & Mss. library Thiruvananthapuram can be considered. This library has a total collection of about 65000 manuscripts out of which nearly 2/3 are Sanskrit manuscripts. Though not complete, based on the present published index the number of manuscripts in Sanskrit is 35060. But out of this, only 1294 manuscripts have the year recorded. Similarly the number of Malayalam manuscripts as per the published index is 8975 out of which, only 475 are dated. It clearly shows that vast majority of the manuscripts are undated. The case may be same for the manuscripts kept in the stocks of other libraries also.

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